



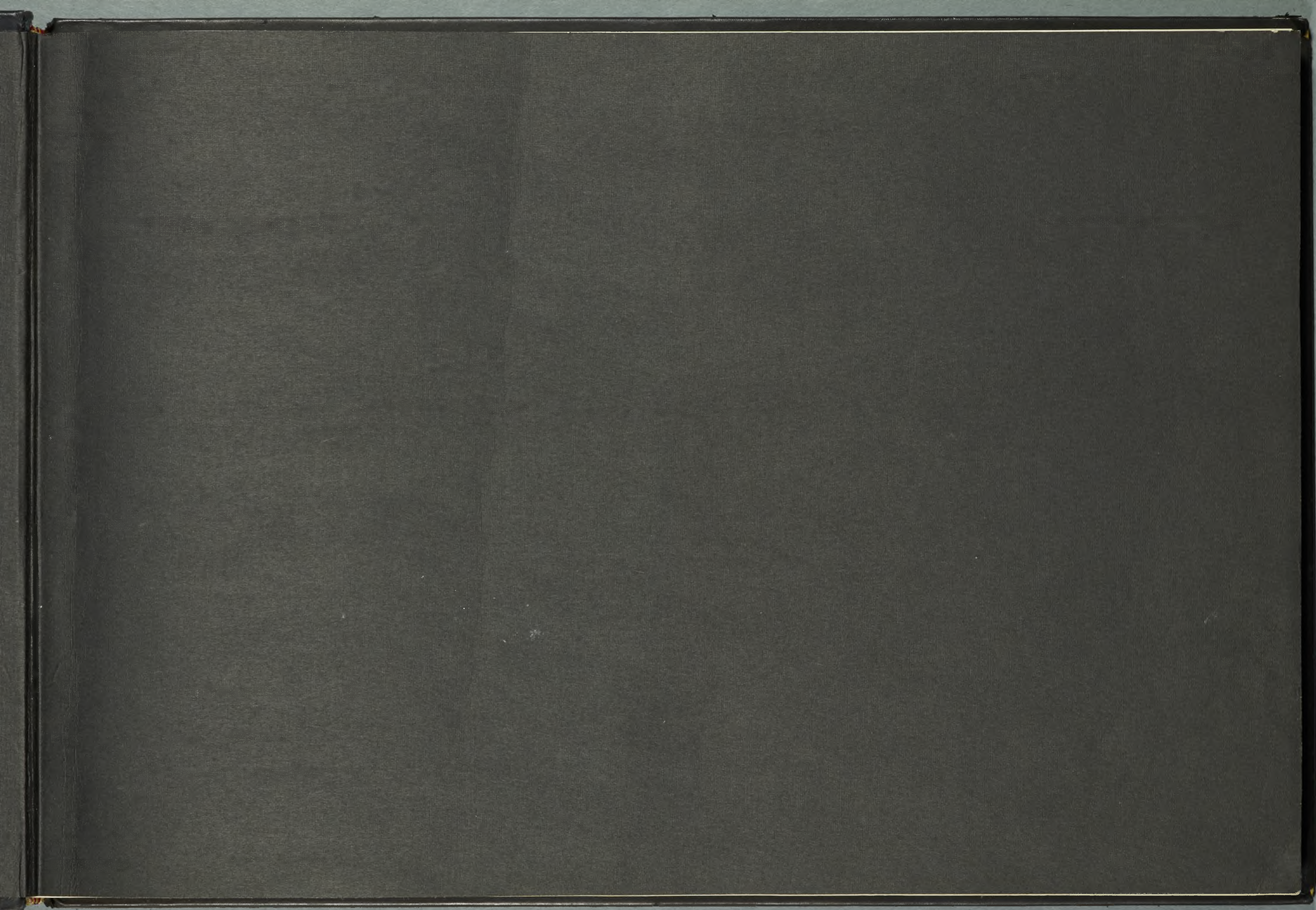
University of Leeds Development Plan 1960

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University of Leeds Development Plan

being a report on proposals for the way buildings could be planned and laid out
to accommodate both the present needs and the growth in the size of the University
which may be expected during the coming decade,
prepared by Chamberlin, Powell and Bon, architects, April 1960

Published by the University of Leeds

PRESENTED

Foreword

by the Vice

Sir Charles

The building
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Foreword

by the Vice-Chancellor,

Sir Charles Morris, M.A., LL.D., D.Litt.

The buildings of the University of Leeds which were planned in 1927 to the winning design by Messrs Lanchester, Lucas & Lodge in a limited competition are now reaching completion. After Dr Lodge's retirement in 1958, the Council of the University invited Mr Peter Chamberlin of Messrs Chamberlin, Powell & Bon (who are already well known as architects of the Barbican Redevelopment Plan for the City of London) to prepare an absolutely independent report incorporating views as to how the University should develop further. We did this because we felt it would be of the greatest interest and value to us to receive the opinions of architects who would approach the problems of the University with fresh and independent minds.

The proposals put forward by Mr Chamberlin in this report have not yet been considered by the University and no decisions have been taken which commit us to accepting them.

When Mr Chamberlin first spoke to me at the beginning of his inquiries I told him that in May, 1957, the Senate of the University had expressed the view that the University would need to grow to the size of about 5,500 students. He then asked me whether I thought that a long-term plan covering the needs of the University for, say 20 to 30 years, ought to be drawn to this size. Since 1957 it has become likely that student numbers will reach 5,500 by about 1964 or even perhaps a year sooner and I remembered that 1964 would be the first of the years in which the very large birth-rate in the post-war period would affect the University entry. It was not easy then – it is not easy now – to predict how much the University of Leeds will in the event be called upon to do for this generation of students, but there can be no doubt that it will wish to do its utmost to manage whatever is necessary when the time comes. I therefore said

that whatever our present plans were it might well be that the University would have to receive as many as 7,000 students in the later 1960s. It therefore seemed unwise to make a long-term architectural plan which was likely to prove to be on too small a scale. It is comparatively easy to reduce the provisions of such a plan; it may be almost impossible to increase them.

It was also necessary to bear in mind that, if history is any guide, universities when they have taken in increased numbers for an emergency rarely diminish their numbers very much after the emergency has passed. In any case public opinion of the national needs has recently changed. A month or two ago the Chancellor of the Exchequer declared that the Government is considering whether it will be necessary to provide places for 175,000 to 180,000 students in the whole country rather than the 125,000 to 136,000 places which were previously being planned. In view of this it will be necessary for the University now to consider whether it should not plan on a permanent basis for substantially larger numbers than 5,500. This report, which records detailed research and puts forward a number of proposals, will undoubtedly greatly help the University to make this important decision.

In order to become thoroughly informed on the conditions affecting the placement and sizes of buildings, Mr Chamberlin has discussed the development of the University with many of the heads of teaching and administrative departments and with the students themselves. He has been given complete access to our records, and the Resident Architect and the Registrar have given him all the data he has asked for. We have, in fact, invited him to form for himself as comprehensive a picture as possible of the University by collecting information and hearing the

opinions of a large number of members of the University both senior and junior as to its future.

Quite early on in his analysis of the needs of the University Mr Chamberlin formed the view that the effectiveness of the University would be much increased if it were possible for a large proportion of students to live on the main University site: he felt that this would not only add to the liveliness of University life but would bring buildings into use which at present are often unused at week-ends and in the evenings. I therefore suggested to him that he should, if he thought fit, plan for a substantial number of residential places for both men and women on the central site of the University. Development away from the central site did not come within Mr Chamberlin's terms of reference; but it is the overall intention of the University, as suitable sites become available, to increase residential accommodation so that it will be possible for two-thirds of our students to be in residence.

Although this report is made to the Council and Senate of the University, arrangements have been made for it to be published so that it may be widely accessible. Without doubt many people interested in the development of the University of Leeds, and in the development of universities generally, will wish to read it. The opportunities afforded by our site have special significance; there are not many cities in which it could be possible to walk straight from the heart of the city – the Town Hall and civic buildings, the libraries and art gallery – into the University precinct. There is, moreover, a great fascination in seeing how modern architects approach the planning problems of a growing University and seek solutions that will satisfy on all counts – technical, educational, social and aesthetic.

C. R. Morris



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The following system of numbering pages, paragraphs, illustrations and tables has been adopted to facilitate cross reference.

All pages in the book are numbered consecutively, from 1 to 144. All paragraphs in the text are numbered, starting afresh on each page.

All illustrations are lettered in alphabetical order, starting afresh on each page. All Tables in the Appendix are designated with a capital T, and start afresh on each page.

To simplify cross reference, each paragraph is referred to by the page number on which it occurs, followed by a decimal point, followed by the number of the paragraph on the page ; thus the third paragraph on the fourteenth page would be referred to as 14.3. Similarly each illustration is referred to by the number of the page on which it occurs followed by the letter reference ; thus the fourth illustration on the sixty-fourth page would be referred to as 64d. Similarly tables are referred to by the number of the page on which they occur followed by the table reference number ; thus the second table on the hundred and fourth page would be referred to as 104T2.

Preface

- 1 Architecture has been defined as 'the control of space to encompass a human activity'. This definition implies that, before architects can begin to consider how space might be controlled and given meaning as an art expressed in terms of building materials and forms, it is necessary for them to understand the human activity which needs to be provided with internal or external space, sheltered from the weather, protected from other disturbing influences, or otherwise 'encompassed'. To state the obvious, one must first know what is the problem before considering how it can be solved, how much land will be needed, how long it will take, or how much it will cost.
- 2 Ideally, when first considering a problem in architectural development, architects hope to be able to set reasonably exact limits to the building programme. We therefore asked the Vice-Chancellor whether the increase in size of the University at present approved was likely to represent its final stage of growth, or whether, within the foreseeable future, a still larger expansion should be allowed for. As is recorded in this report, we carefully considered the implications of his forecast that as many as 7,000 students might be expected to need accommodation in the University of Leeds by 1970. Our study of all that this implied made it clear to us, at an early date, that no definite end to the development problem could be foreseen since the growth of a university is, like good conversation, largely self-generating. If no exact limit to the problems involved can be foreseen, no finite, rigid layout for the Development Plan is appropriate; what is needed is a coherent pattern of development which would be viable.
- 3 Because this report is not intended to lay down a final pattern of development which must be accepted or rejected *in toto* we suggest that it should be supplemented annually with further reports which would record amendments as these are approved by the University; these supplements could include cumulative indices in order to facilitate easy cross reference between subjects raised in this original report and in the subsequent additions. As it is probable that, after a few years, cross reference between several volumes would prove cumbersome, it might be desirable to embrace all the amendments in a comprehensive revised edition produced at longer intervals – perhaps to coincide with the quinquennial review of the University's development.
- 4 There would seem to be many advantages in having available an overall plan of development recorded in a series of volumes brought up to date at regular intervals; it would provide a clear overall picture of how the University was actually growing, it would illustrate new developments and changes of course, it would act as a 'Domesday Book' recording existing accommodation and how this is being made use of, and, not least, it would serve as a vehicle for the crystallization of ideas.
- 5 This particular volume, therefore, should be regarded as a record of enquiry and research followed by a prognosis for the future development of the University. The research should not be regarded as, in any sense, complete since it needs to be taken further. Nor should our actual proposals be regarded as finite or unyielding to modification. Our intention has been to formulate a coherent pattern of development to which all proposed modifications can be related not only in the light of the particular considerations which may have given rise to them, but also as contributions to the overall picture.



Section 1

Space requirements of the departments of the University

Introduction

Method used to estimate space requirements

Some factors affecting the provision of space in departments

A study of Lecture Room requirements

The relationship of departments

The calculated space requirements of departments

Intro

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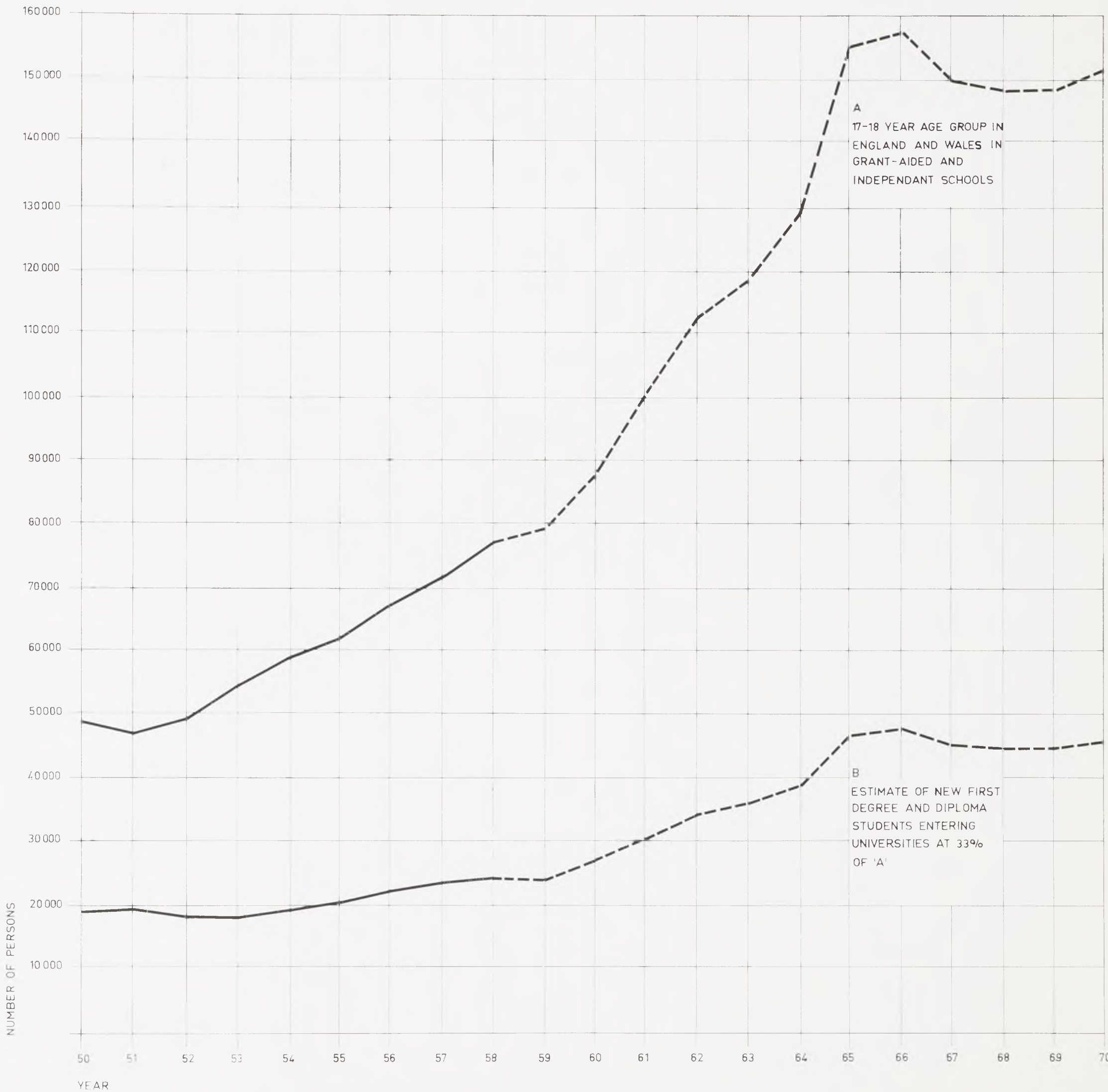
Introduction

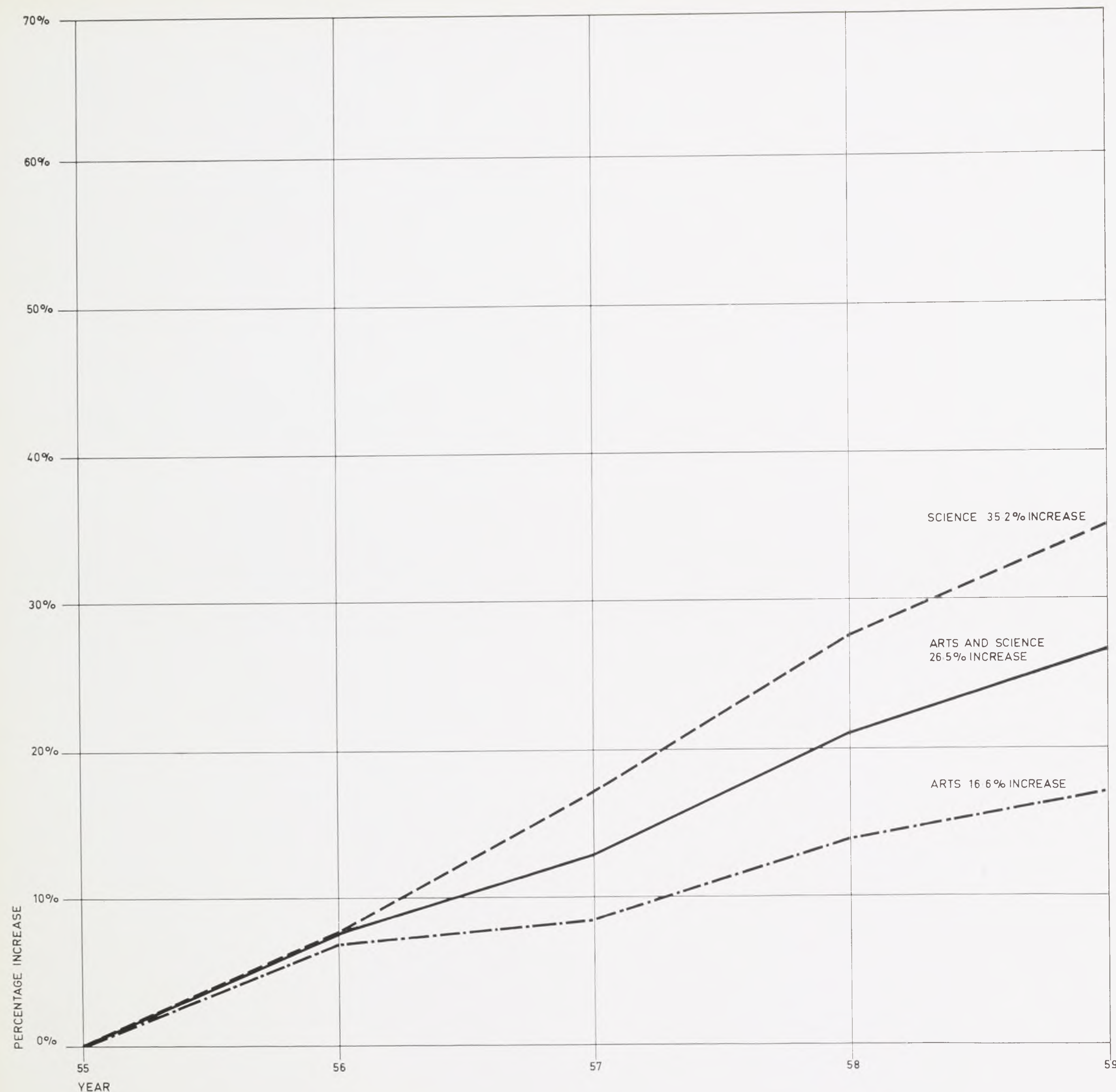
- 1 As it is necessary to understand the scope and nature of the activities which are to be accommodated before preparing a University development plan, it seemed prudent to enquire into any evidence – both external and internal – which would throw light on the Vice-Chancellor's suggestion that about 7,000 students might well need to be provided for in the University of Leeds by 1970.
- 2 It therefore seemed necessary to ask for the production of records and estimates which would indicate the likely demand for University places during the next decade; analysis of these figures suggested that, if the University of Leeds continued to accept the same proportion of the whole country's university entrants as it has done during the past decade, it might be faced with having to provide for a total student population during the later 1960's of about 8,500 (graph A, Illustration 12a). Solely thinking in terms of student numbers, therefore, this was a reassurance that the demand for student places would not only exist but might even justify expansion beyond the figure of 7,000 suggested by the Vice-Chancellor. The assumption that the University of Leeds should continue to accept such a large proportion of the whole country's University entrants may be questioned, particularly by any who think of Leeds as a regional University. Analysis of the University's records however shows that whereas twenty years ago one-third of the students came from outside a radius of thirty miles round Leeds and two-thirds from within this area, today the picture has completely reversed; this underlines, of course, that Leeds is already a university of national standing and must be expected to develop on this basis. (9a, 12a, 13a, 13b)

9a 17- and 18-year old population and the number entering universities

Graph A Total number of 17- and 18-year olds in England and Wales, actual numbers 1950-1958 and estimated numbers 1959-1970; based on 100T1.

Graph B Numbers entering Universities of England and Wales to read for undergraduate qualifications, actual numbers 1950-1958 and estimated numbers 1959-1970. The estimated numbers in Graph B are based on 33% of Graph A; i.e., the average ratio between the 17- and 18-year old age-groups and university entries in the period 1952-1958.





1 In contrast to this statistical data which indicates a likely demand for university places in excess of the 7,000 postulated there are, of course, other influences which tend to limit expansion. These may be considered under three headings: (a) the effect of rapid expansion on the internal structure of departments in the University of Leeds; (b) the establishment of new universities; and (c) limitations arising out of the site and practicable rates of building.

2 Considering (a) first, it is right to bear in mind that few professors would like to contemplate too rapid expansion in their departments because they would fear the University would inevitably be offering a less good service to students. To cater for a sudden influx of students carries the parallel implication of a large increase in teaching staff; yet there is no reason to suppose that a large number of university lecturers of high calibre will suddenly become available for appointment within a short period. Moreover, too rapid change makes it very difficult to consolidate methods of teaching; if a department is reasonably stable in size, energy can be directed towards improvement in quality.

3 With regard to (b) it is clear there is a strong body of opinion which holds the view that the need for university expansion will partly be met by the foundation of new universities rather than by ever enlarging those which already exist. For this reason, therefore, it would seem appropriate that Leeds, while continuing to make its contribution to the national need for wider university education, should not necessarily continue to take as large a proportion of the demand as it has done in recent years.

4 With regard to (c), the site zoned in the City development plan for University extension is limited in area and most of this is covered with standing buildings which have to be demolished before new building can take place; within a large city any extension of land ear-marked for one particular purpose has to be at the expense of land zoned for another purpose. For this reason any extension of the University area has to be well supported and possession of the land inevitably takes a long time. There is also a limit to the practicable rate of building on any given site. If this is exceeded the disturbance caused to occupants of adjacent

10a Percentage increase in G.C.E. candidates

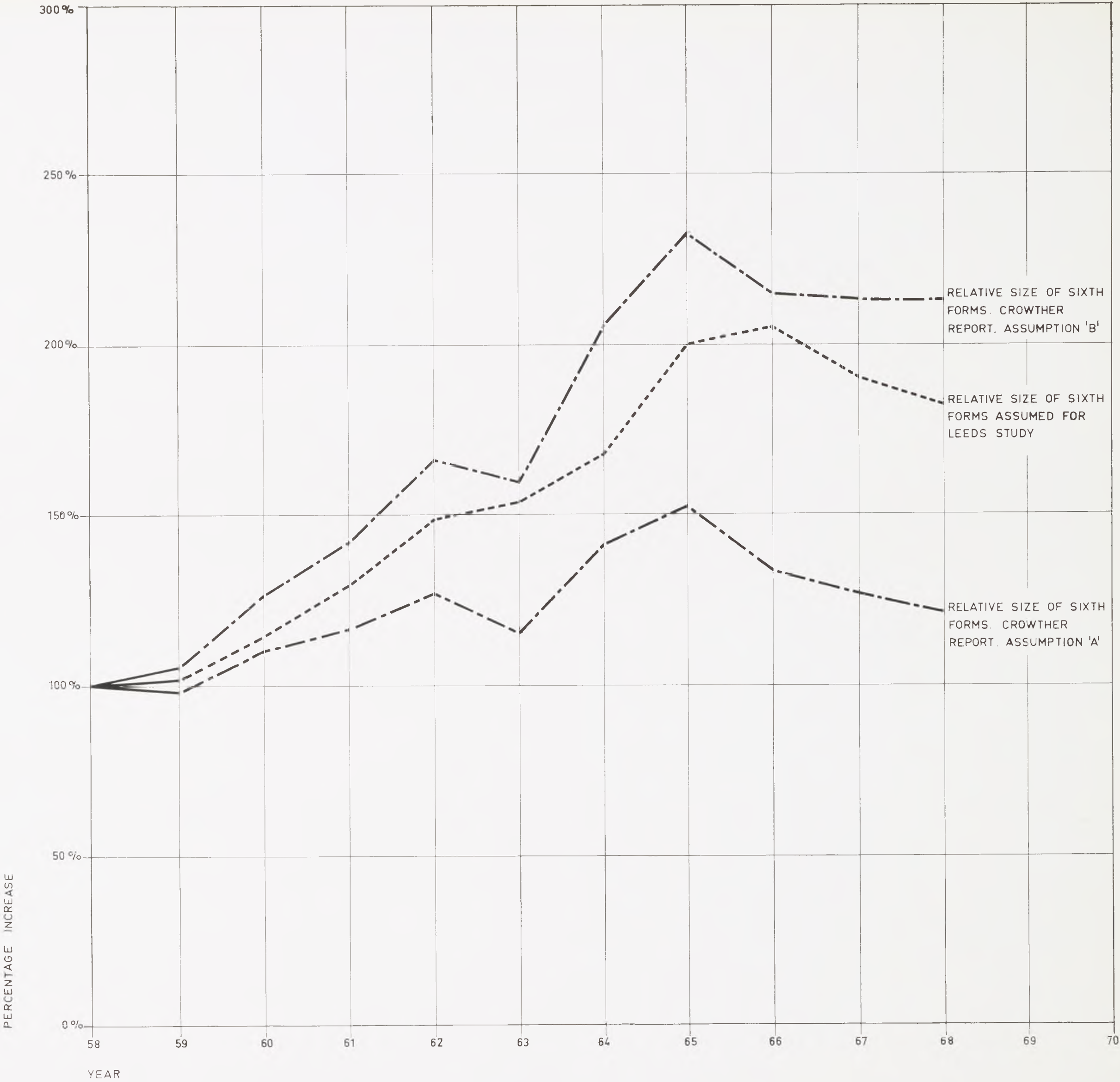
Percentage increase in the number of candidates entering for the General Certificate of Education of the Joint Matriculation Board of the Universities of Birmingham, Leeds, Liverpool, Manchester and Sheffield 1955-1959. This comparison shows a swing towards science subjects which seems likely to continue with the possible result that the Faculties of Science, Technology and Medicine may expect to receive a greater share than the Arts Faculties of the increased number of applications arising from the 'bulge' and the 'trend'; based on 101T1.

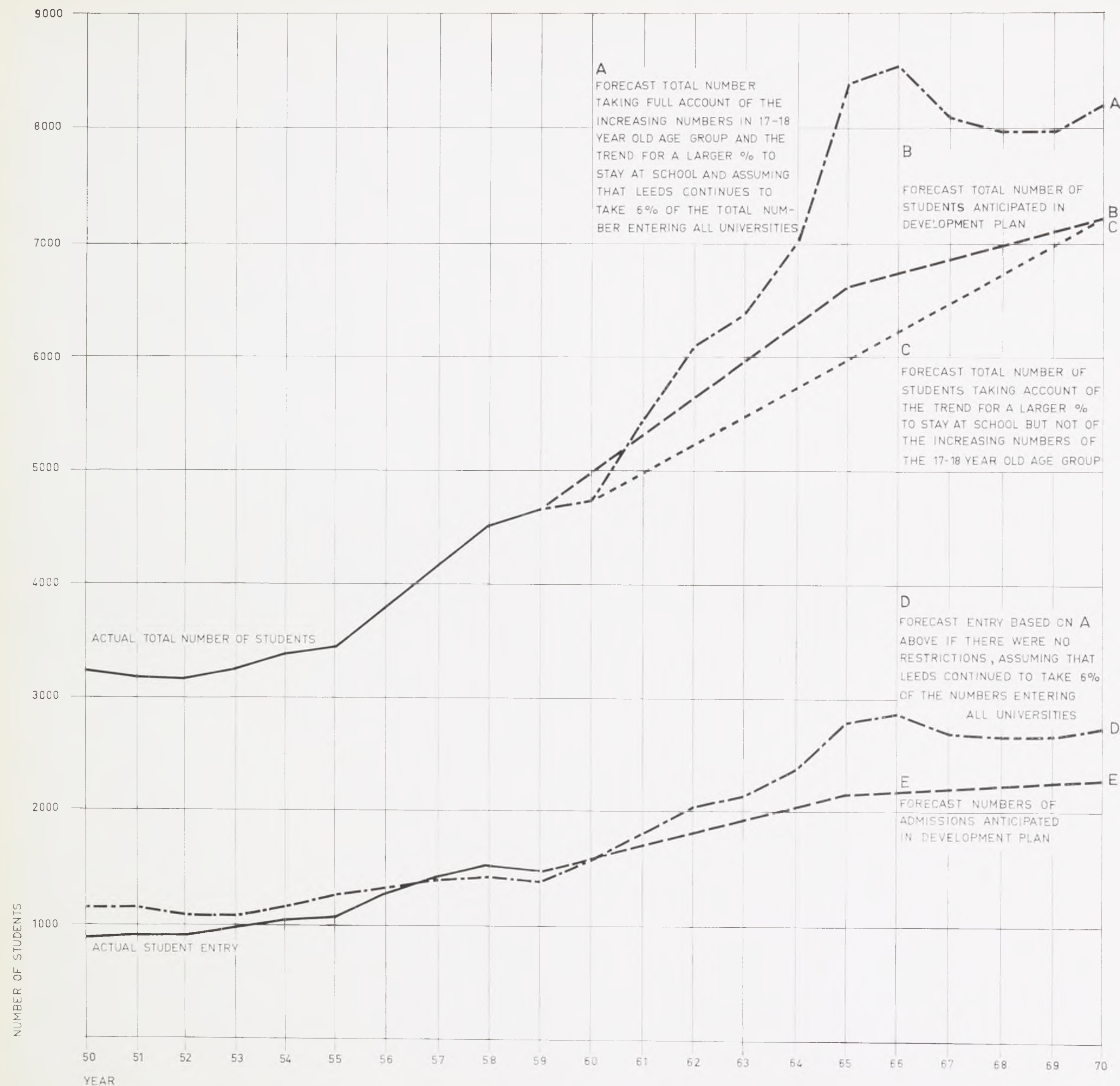
buildings can become intolerable and the cost of building may be unduly increased. In view of all these considerations, therefore, it would seem that a figure considerably lower than 8,500 is not only the limit of what is desirable but also of what is practicable.

- 1 When the structure of a university is considered in any detail it soon becomes apparent that it is very much more than an agglomeration of departments. Few departments can be considered as islands self-sufficient and complete in themselves. In addition to the 'special studies' students belonging to a department there are almost always a number of students from other departments who need 'service' teaching. In order to understand the intricate relationship between the various departments of the University of Leeds it was necessary to understand this structure and to have a breakdown on a departmental basis of the global forecasts of future student numbers. A close study of the way in which departments and faculties have developed during the past decade indicated certain inevitable patterns of development for the next decade.
- 2 Because the University is committed to technological expansion for which the buildings are already half finished there was no great problem in assessing the likely expansion within this faculty. The future size of the Science departments was harder to estimate although it was, to some extent, conditioned by the teaching which the Science departments must provide as the basic ingredient of the University courses in technology. The plans of the Science departments for expanding their own special studies schools, however, should make it possible for them to meet the demands for service teaching which might otherwise appear overwhelming. In addition, analysis of the number of candidates sitting for the General Certificate of Education Examinations of the Joint Matriculation Boards of the Universities of Birmingham, Leeds, Liverpool, Manchester and Sheffield, indicates that more emphasis is being given in sixth forms in schools to the scientific subjects; plans for expansion of 'special studies' schools in Science do not therefore appear unrealistic. The national demand for doctors and dentists can be

11a Percentage increase in size of sixth forms

The relative size of the population of sixth forms in 1958-1963 estimated in three ways. The upper and lower graphs are based on Table 35 in the 'Crowther Report' which shows two estimates on different assumptions. Assumption A, that the proportion of the 17-year old age-group in maintained schools will be the same as now and that the increase in size of sixth forms will be caused by the 'bulge' only. Assumption B, that the proportion of the 17-year old age-group in maintained schools will continue to rise by a 'trend' of 0.5 per cent per annum, which is approximately the average rate of increase of the past decade, as well as the 'bulge'; based on 101T2. The middle graph shows the estimate of the relative size of sixth forms used for the purposes of this report. It is based on an assumption of 0.4 per cent increase per annum in the size of sixth forms and is calculated on the 17- and 18-year old age-groups added together.





12a Graph showing the influence of the 'Bulge' and the 'Trend'

These graphs show the actual numbers of full-time students in the University of Leeds in the years 1950-1959 inclusive. For the years 1960-1970 inclusive it shows numbers estimated in two ways, viz.

Graph A taking account of the 'bulge' and the 'trend' as worked out in 100T1 (the actual figures used for illustration 12a are from Column (m) 100T1).

Graph C taking account of the 'trend' without the 'bulge'. This is done by supposing that the total of the 17- and 18-year old age group were to remain constant at approximately the 1960 figure, i.e., 1,140,000 (see Col. (c) 100T1). The same factors are then applied, i.e. 'trend' as in (Col. (g) 100T1), 30% to give university entrants (Col. (h) 100T1), 6% to find the Leeds entry (Col. (j) 100T1) and multiplying by 3 to give the total Leeds numbers (Col. (m) 100T1). The figures graphed are therefore

Hypothetical Total of 17- and 18-year olds in England and Wales, ignoring the 'Bulge'	% of 17- and 18-year olds in schools in England and Wales 'Trend' = 0.4% p.a.)	Total Estimated numbers at Leeds taking account of 'Trend' only
1960	7.7	4,740
1961	8.1	4,985
1962	8.5	5,231
1963	8.9	5,478
1964	9.3	5,724
1965	9.7	5,970
1966	10.1	6,217
1967	10.5	6,464
1968	10.9	6,712
1969	11.3	6,958
1970	11.7	7,203

The estimated figures in this graph are hypothetical in so far as they relate only to the 'bulge' and 'trend' and do not take account of factors such as the availability of places.

Graph B. The dotted line B shows the number of students in the University as estimated by the Vice-Chancellor (see 102T1). The estimates, which are for 1965 and 1970 only, are based largely on proposals made from time to time by the teaching departments for their future development.

It will be seen that the Vice-Chancellor's estimate for 1970 coincides with the future numbers which might arise from the effect of the 'trend' if the size of the 17- and 18-year old age group were not to increase, but from 1967 onwards into the 1970s it is clear that the 17- and 18-year old age group will be considerably larger than it is at present; the 'plateau' years of 1967-1970 in the top line of the Graph A are therefore likely to indicate normal conditions in the next decade. The additional Students represented by the difference between Graph A and Graph B for 1970 will presumably, however, be catered for by new universities. Nevertheless existing universities will need to make some contribution towards meeting the emergency conditions of the 'bulge' years from 1964-1967 and the Vice-Chancellor's estimate therefore supposes a more rapid expansion between now and 1965 than between 1965 and 1970.

Graph D shows 6% of the students entering all universities during 1950-1959 and 6% of the forecast entry to all universities based on Graph A, assuming there were no restrictions, and taking account of the increasing numbers in the 17- and 18-year old age group, the 'bulge', and the 'trend' for a larger proportion of the age group to stay at school. Using the simplified formula of multiplying by 3 the total number of students resulting from such an entry, shown in Graph A, would reach 8,500 by 1966 although in fact the period of greatest pressure would be spread over the three years 1966-1968.

Graph E shows the actual entry to the University of Leeds 1950-1959 which has been slightly more than 6% of the national total entry to all universities since 1957. The graph also shows the forecast entry of students anticipated in the Development Plan. The increasing difference between Graph E and Graph D, which shows the entry required to maintain 6% of the estimated national total without restrictions, would presumably be made by new universities.

fairly accurately assessed and it follows, therefore, that the Faculty of Medicine has a clear picture of what its future numbers are likely to be. In the Arts faculties, however, it is difficult to foretell the future as confidently although plans are being made for expansion in some departments; to preserve a balance in the activities of the University it would seem desirable that the Arts departments should continue to play as significant a role as at present and for this reason the numbers of arts students should not fall below about one-third of the total University population: the present plans of individual arts departments suggest that this is not likely to happen. When these inter-related tendencies within the different faculties had all been assessed, it was apparent that with the figure of 7,000 for a total student population there should be no difficulty in maintaining a reasonable and healthy balance between the various faculties and departments. (10a, 12a, 14b, 14c, 14d, 14a)

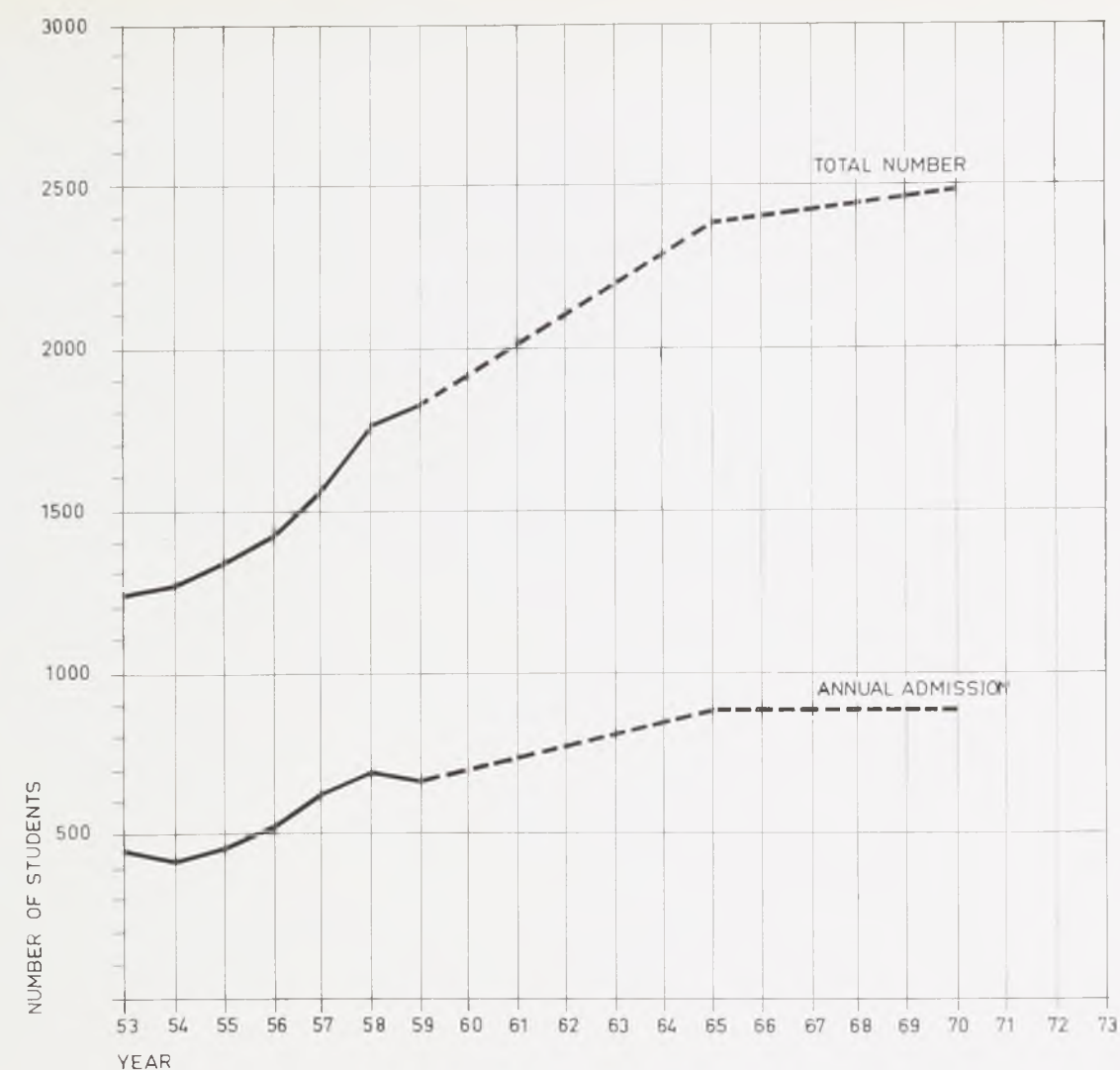
- 1 If it were to be decided that the University of Leeds should increase steadily up to a figure of 7,000 by 1970 this would, in effect, only be catering for the additional number of applicants arising from the trend for more young people to stay on into the sixth forms of Grammar Schools and to qualify for university admission. In order to make some contribution towards catering for the age group bulge, the rate of expansion would have to be increased considerably in the early years of the decade. It is, in any case, likely that many departments of the University will be over-crowded during the 'bulge' years. (11a)
- 2 The various graphs included in this section of the report (9a, 10a, 11a, 12a, 13a, 13b, 14a – d) illustrate the arguments put forward; the statistical evidence on which they are based appears in the Appendix. (100T1, 101T1, 102T2.)

- 3 In conclusion therefore it seems clear that it would be realistic to plan for a total student population of 7,000 by 1970, since a demand for places in the University of Leeds will exist far in excess of this number. This rate of growth would be swift but nevertheless practicable, as a site for this size of university could be made available and the rate of building implicit would be possible. Such an increase in size of the University is consistent with the plans of individual departments and would represent a necessary yet reasonably balanced expansion within the departments so that the needs of research, 'special studies' students and service teaching could all be provided for.

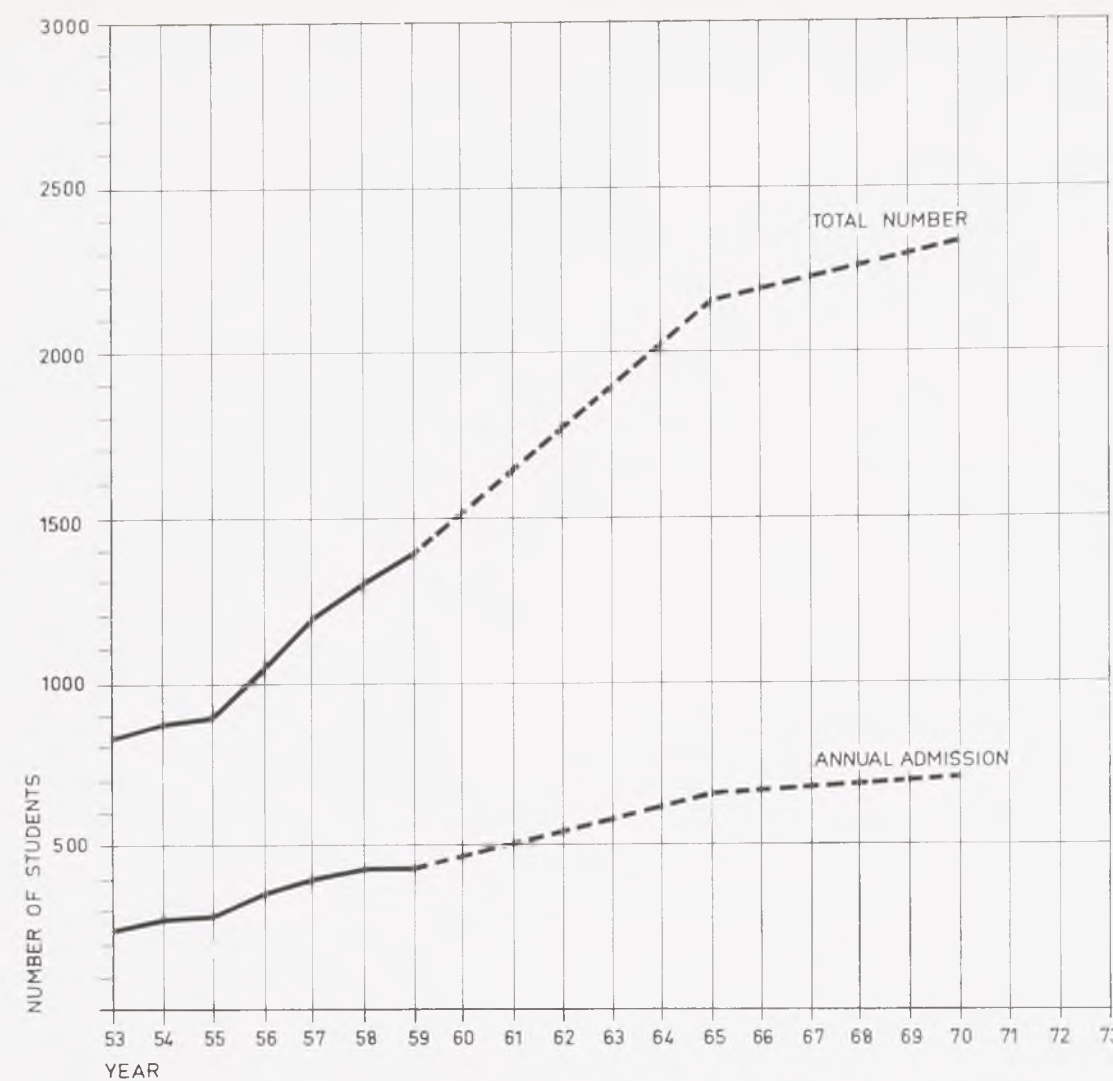
13a-b Students attending the University

Twenty years ago one-third of the students in the University of Leeds came from outside a radius of thirty miles round Leeds and two-thirds from within this area; today the picture has completely reversed; based on 101T2.

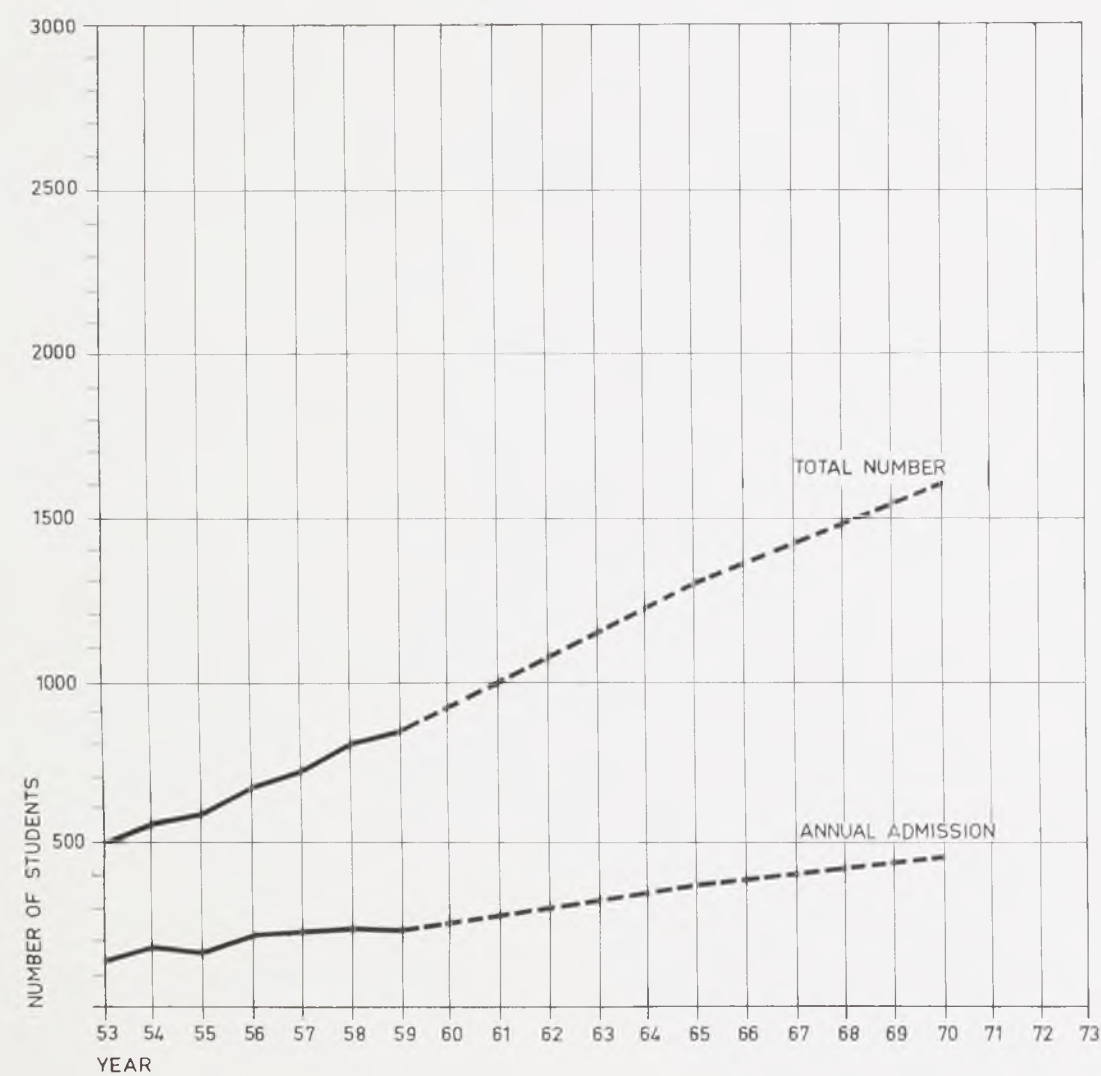




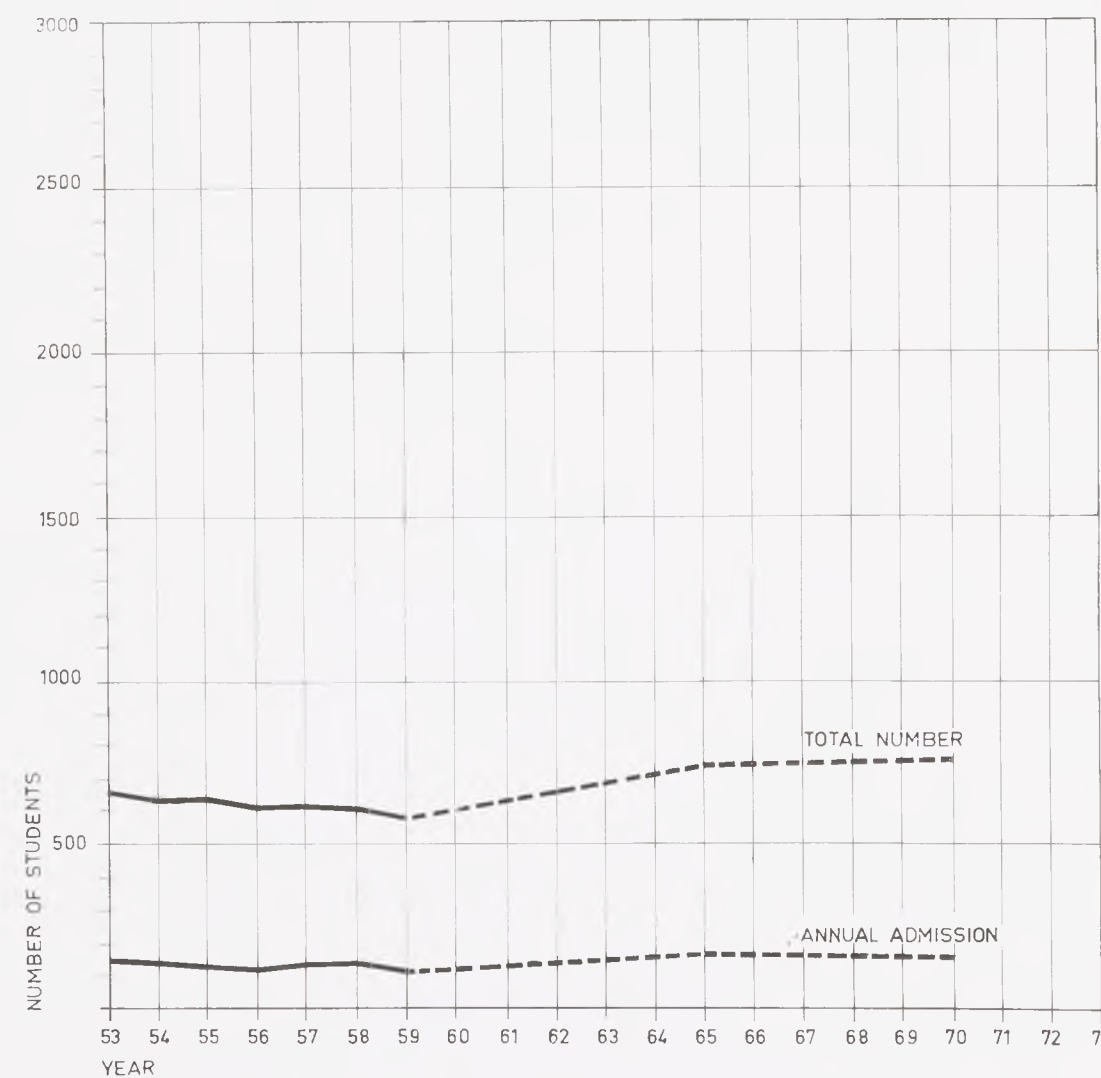
14a Arts



14b Technology



14c Science



14d Medicine

14a Students in the Faculty of Arts, 1953-1970

Actual and forecast total numbers and admissions to the Faculties of Arts, Economic and Social Studies and Law; based on 102T1.

14b Students in the Faculty of Technology 1953-1970

Actual and forecast total numbers and admissions to the Faculty of Technology; based on 102T1.

14c Students in the Faculty of Science 1953-1970

Actual and forecast total numbers and admissions to the Faculty of Science; based on 102T1.

14d Students in the Faculty of Medicine 1953-1970.

Actual and forecast total numbers and admissions to the Faculty of Medicine; based on 102T1.

The method used to estimate space requirements

- 1 The need to make an accurate estimate of the space which would be required by the various departments in the future posed the difficult problem of finding an appropriate method of assessing what would be needed by a total population of about 7,000 students by 1970. The method to be employed had to allow for the different rate of increase in each department and the effect of one department on another caused by the 'cross-over load' which occurs when students belonging to one department go to another to study certain subjects included in their courses.
- 2 A rule of thumb method of assessing space required on such a basis as 'square feet per student' is of little value in estimating future needs in a university because this does not take into account the variable amount of time spent by students in a department. Nor would it be sufficient merely to allow a *pro rata* increase of space based upon existing accommodation and student numbers which would involve the danger that existing deficiencies – either in accommodation or in the use of space – would be projected into the future. This would occur, for example, where the existing rooms are too small or, conversely, where certain rooms are not used as fully as they could be either because they are empty too much of the time or only partly occupied at other times.
- 3 It must also be recognised that there are certain imponderable considerations which cannot be accurately allowed for by the employment of any method of assessing space for future needs. Entry figures in certain departments may increase at an unforeseen rate; new fields of study may develop which require new, additional or unfamiliar facilities; unforeseeable research may increase the need for space; new Professors may introduce entirely new methods, subjects and ideas.
- 4 Before describing how the information was collected, which made it possible to assess both the volume and the type of accommodation needed by an expanding university, it is important to define certain terms which it was found convenient to employ.
- 5 'Special studies' students: students belonging to a department who spend most of their time in their own department but who may also attend other departments to study subjects forming part of their courses.
- 6 Attendant students: students taught in a department where they study subjects which form part of their course, but who come from other departments to which they primarily belong.
- 7 Teaching load: is the product of the number of students taught in a particular group and the number of hours spent per week in teaching them; the total teaching load on a department is the sum of all such products (dependent on the number of students, both 'special studies' and attendant students, the number of courses and the number of hours spent teaching each course each week).
- 8 Crossover load: is the teaching load exerted on one department by students attending from another department; the total crossover load is the total teaching load exerted on one department by students attending from all other departments.
- 9 Occupancy factor: the number of places in a teaching space (lecture room, seminar room, laboratory, etc.) actually occupied expressed as a percentage of the number of places available in that space.
- 10 Frequency factor: the number of periods in a week during which a teaching space is used compared with the maximum number of uses possible which would occur if the teaching space could be fully employed during all the periods of the weekly time-table.
- 11 Utilisation factor: the ratio between the actual use and the maximum use of a teaching space taking account both of the numbers of places available in a room and the frequency of use possible. The utilisation factor is the product of the occupancy factor and the frequency factor.
- 12 Space use factor: this is the area of space needed for activities compared with the actual teaching load on that space; this can be expressed in terms of square feet per student hour.
- 13 Reference has already been made to the analysis of the records of the numbers of students who entered the various departments of the University during the past decade; this analysis, considered in conjunction with other factors, made it possible to forecast the number of students who might be expected to enter departments in 1965 and 1970. With the object of finding out how well the existing accommodation in the University was being made use of – and what might be the optimum demand for, and provision of, accommodation in the future – certain other surveys and inquiries were carried out with the help of the Heads of Departments, the Registrar and the Resident Architect. In order to find out about the courses which students followed, and the space occupied in teaching them, a form was drawn up which was circulated to many of the Heads of Departments with a request that it should be completed. A reproduction of a completed form is illustrated in 106a. Analysis of the information contained on the completed forms was expected to provide useful information concerning the teaching load on departments and about the utilisation of space. As can be seen from study of the form illustrated, which was completed by the Mathematics Department, the following information was obtained:
 - (a) The category of courses which distinguished 'special studies' from attendant and post-graduate courses.
 - (b) The title of these courses, which was useful for identification and cross reference with other documents.

- (c) The particular teaching groups into which each course is divided.
- (d) The number of students actually in each group which could be compared with the capacity of the room used.
- (e) The composition of the group of students including the numbers attending from other departments. From this can be assessed the effect on a particular course of likely increases in student numbers in other departments.
- (f) The time spent in each week, in each room, by each group.

Regarding the utilisation of room space, it is well known that rooms are not – and probably never can be – made full use of for every hour of the academic week. The nature of the problem of devising a time-table for a large number of inter-related departments makes full utilisation very difficult. Spare periods must also be allowed to prepare certain rooms and equipment for a subsequent teaching period. However, any assessment of the number of rooms which are needed to cater for a particular teaching department must be based on some assumption about the number of hours of use which it should be possible to plan for. The detailed information on the existing utilisation of rooms in departments was provided by analysis of the answers collected from the department and this made it possible to arrive at a working hypothesis regarding utilisation of space.

2 Heads of Departments were also asked to submit 'Statements of Need' in answer to the following questions:

- (a) The number and capacity of lecture rooms, seminar rooms, laboratories, staff rooms, etc., which might be expected to provide ideal accommodation for the present number of students assuming, for the time being, no change in staffing.
- (b) Assuming that there were no limitations on either space or staff, the optimum size of teaching groups.
- (c) The working space needed by each undergraduate and postgraduate student in terms of square feet per student place when studying laboratory subjects – excluding all service rooms.
- (d) For the purpose of calculating the accommodation needed for increased student numbers, whether it would be adequate to make proportionate increases in the estimate of optimum space required for the present numbers of staff and students, or whether there are special circumstances which would render estimating on these lines undesirable.
- (e) Whether there is a maximum number of students above which it would be undesirable for the department to expand from a purely academic point of view.

3 When these Statements had been obtained from Heads of Departments it was possible to draw up a preliminary schedule of accommodation for the individual departments based on the information provided, adjusted to take into account the standards of space provision recommended by the University Grants Committee (see 107T1), modified

where necessary to make allowance for the special needs of departments in the University of Leeds. These preliminary schedules thus contained a reasonably optimum provision of accommodation for 1958-59 based on the existing courses and staff-student ratios. They were useful as a basis upon which to make proportionate increases in the space required to meet the additional numbers of students expected to be attending various departments if the University as a whole were to increase in size to a total population of about 7,000.

4 An approximate estimate of the space likely to be required by a department in the future was made by comparing the teaching load in student hours for 1958-59 with the teaching load anticipated in 1970 and by then making a proportionate increase in the optimum space requirements for 1958-59. These estimates based upon *pro rata* increases proportionate to the increase in teaching load have been checked in the following ways. (a) The increase in the numbers of staff was examined in individual cases and adjustments made to the number of staff rooms likely to be required. (b) The number and size of lecture rooms required was studied in detail and a preliminary forecast of likely need for 1970 was made taking into account the limits in the size of classes recommended by each department. (c) Likely developments in postgraduate research work were assessed by Heads of Departments themselves and the schedules modified in the light of this information.

5 As a result of this study it was possible to forecast preliminary schedules of accommodation for 1970, based on the optimum requirements in 1958-59, adjusted to take account of increasing numbers of 'special studies' students within departments and attending from other departments; allowance was also made for expanding research work and for the numbers of staff expected in the departments by 1970. These schedules represent, therefore, an anticipated demand for space to accommodate the work of various departments in the future. They do not take account of the consolidation of requirements which might be possible if certain rooms could be shared between departments particularly, for example, lecture rooms. This is partly because such consolidation depends upon the physical limitations of distance between departments which might sometimes be served by the same rooms but, more particularly, it depends upon the need to forecast sample time-tables in order to check whether what might be theoretically possible is, in fact, practicable. The purpose of trying to make sure that the fullest use is made of all space existing or planned is in order to free any finance available for University development for the purpose of increasing or improving facilities, rather than to provide redundant accommodation. It is, therefore, very strongly advised that forecasts of comprehensive time-tabling of courses should be attempted in order to arrive at the highest practicable utilisation of all accommodation in the University. We recommend this exercise as the next most useful step to take.

Some factors affecting the provision of space in departments

- 1 A university department is a growing organism; new Chairs are founded; staff and teaching methods change; the content of courses alters and the accommodation and equipment needed is constantly developing. To plan the accommodation required and to design a building to house the activities for which it is intended, the nature of the changes that can, and do, take place must be understood, although every detailed contingency may be difficult to allow for. If it were possible to discern broad principles governing the changes which may take place which would apply generally, these would illuminate the particular situations and should make it possible to anticipate future developments and thus to design realistically.
- 2 The following notes are an attempt to outline some of the factors influencing a university department that might involve changes in accommodation.
- 3 Among the more important factors likely to lead to changes in the accommodation required is the policy and intention of the department either to expand or to stabilise the number of its 'special studies' students. These students spend more time in the department than those attending from other departments and have an overriding influence on the need for accommodation in most departments, although not in all. (In some departments, Mathematics for example, the need for lecture room space is more directly related to the number of students attending from other departments; this factor dictates the quantity of space required.) The numbers of attendant students are not as directly controllable as are the numbers of 'special studies' students and a large increase in the amount of service teaching may influence a department to contemplate an equivalent increase in its own 'special studies' students in order to maintain some balance between the two types of student. If this increase does not prove practicable the shedding of some of the service teaching may be contemplated; should this shedding take place, accommodation must be found for the service teaching rejected by the overloaded serving department either in the parent department or in a special department established primarily, if not solely, to provide service teaching (18a, 18b, 18c, 18d).
- 4 In this connection it is revealing to quote the following passage from a report recently received. 'The maintenance and fostering of research is essential if true university standards are to survive and the staff of the department are not to feel frustrated. Service teaching certainly chokes research if its pressure becomes too great and it has definitely tended to do so in the past few years. The ability of the department to attract staff, and so to continue to perform its teaching duties, depends very considerably upon its research reputation. For the maintenance of this the key members of a department need sufficient freedom from im-

mediate teaching and administrative pressure to be able to guide research, and the number of research students and other research workers within the department must be increased.' This extract illustrates how pressure for the expansion of service teaching may provoke an echoing reaction from the department concerned with regard to its own research work which may lead to an increase in the space needed for research.

- 5 The development of fruitful research work is, perhaps, one of the most imponderable requirements to anticipate with any degree of certainty, since its growth depends on personality as well as on policy. The fact that research in some subject may be directly dependent on the right form of accommodation and equipment being available only adds to the difficulty – and underlines the importance – of assessing the type and form of accommodation likely to be most appropriate
- 6 The nature of the teaching methods employed – lecturing, practical work in laboratories and drawing offices, seminar and tutorial work – obviously have a direct bearing on the amount of accommodation required by different departments, but the quantity of space needed also depends on the number of hours per week a particular method is used. Radical changes in a course may influence the need for accommodation by altering the amount of time spent in particular rooms. If, in a certain course, the method of teaching changes, the space requirements may be affected accordingly; for example, the extent to which tutorials and seminars may be increasingly adopted as a teaching method will be an important factor in planning future space requirements.
- 7 The importance of advanced studies and research work is always emphasised in university departments. The nature of this research work varies considerably, ranging from that being carried on by reading, writing and discussion (needing only quiet and seclusion), through experimental work with apparatus but still on a personal and individual basis, to larger scale experiments with sizeable apparatus undertaken as a project by a group of research workers. Advanced scientific and technological research often requires the use of highly specialised pieces of equipment if worthwhile results are to be expected. Clearly, the relationship between the number of research workers and the amount of accommodation they require is very variable; it is, therefore, most important that the right sort of provision is made which, at the same time, allows flexibility in its arrangement and in the installation of services and built-in equipment.
- 8 The content of the courses given by a department may alter, which may necessitate changes in accommodation. If, in addition, the numbers of students taking the courses increases this, too, may have an effect on the amount of accommodation required. For example, as the size of a class grows, a time may come when teaching efficiency becomes so

impaired by the increased size that the class may be divided into two or three streams thereby changing entirely the type and quantity of space required so that smaller rooms are necessary for, perhaps, two or three times as many teaching hours as before. A similar effect is produced, so far as the demand for space is concerned, when the nature of the work of a department changes due to the developing nature of the subject being studied. (For example, new branches of study may emerge, as with the development of electronics in the Electrical Engineering department.) This kind of separating out, or specialising, has the effect of introducing a need for larger numbers of smaller classes, with the consequent multiplication of hours spent in occupation of teaching spaces. The cumulative effect of this kind of development in courses is to increase the overall demand for teaching space; in particular, the demand for lecture rooms may vary considerably over a period of time. The general tendency appears to be towards larger numbers of smaller classes, although the actual size in many cases is far from small.

18 Space requirements

18a Arts (Languages Departments)

BA General Studies

Greek and Latin Languages and literatures

Semitic languages and literatures

English language, literature and Mediaeval literature

French language and literature

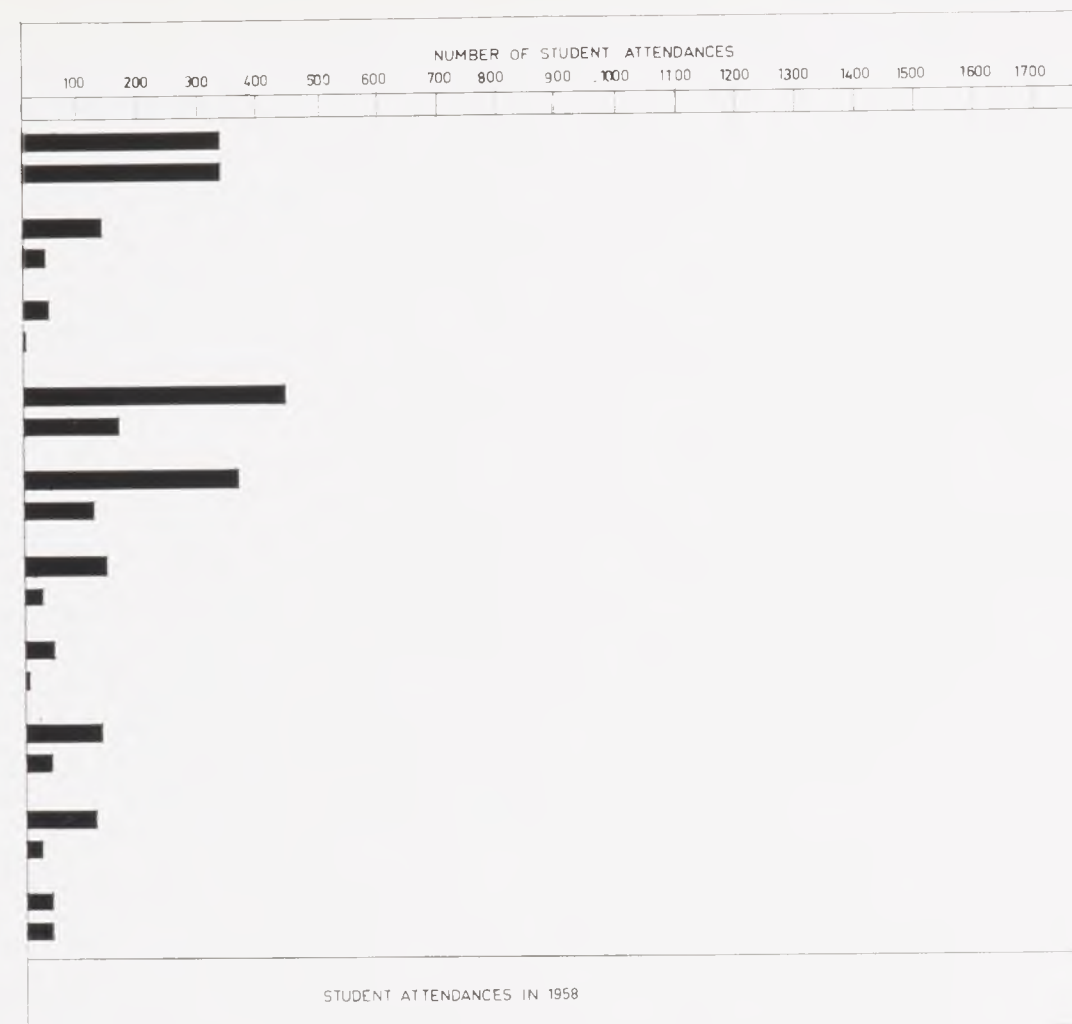
Spanish and Portuguese languages and literatures

Italian language and literature

German language and literature

Russian language and literature

Combined languages courses



18b Arts, Economic and Social Studies and Law

History

Geography (Arts)

Theology

Psychology (Arts and Science)

Philosophy

Music

Textile design

Department of Education

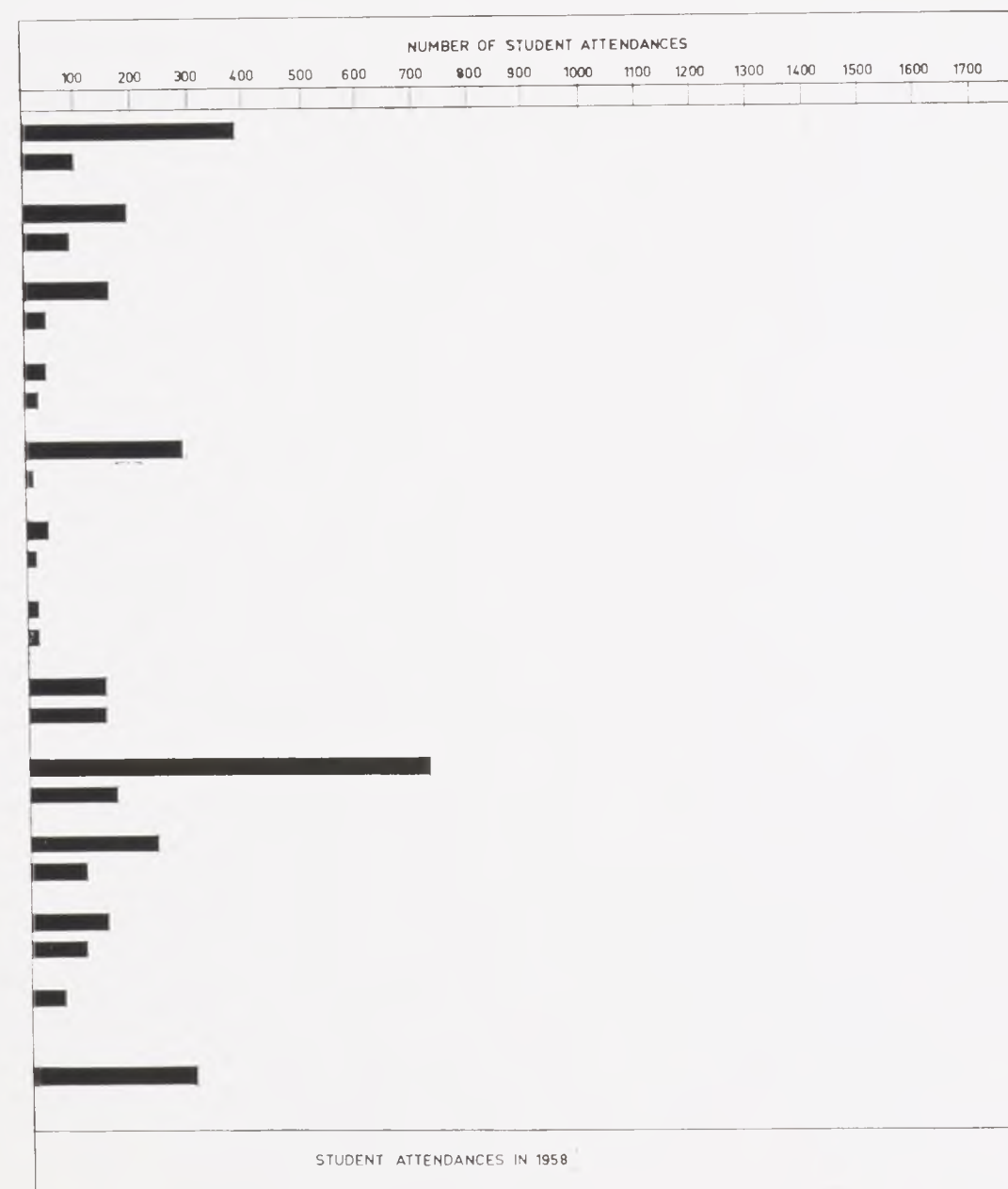
Economics and Commerce

Social studies

Law

Fine arts

Phonetics



18c Science

B.Sc. General Studies

Mathematics

Physics

School of Chemistry

Botany

Zoology

Geology

Geography (Science)

Physiology (Science)

Biochemistry

Pharmacology

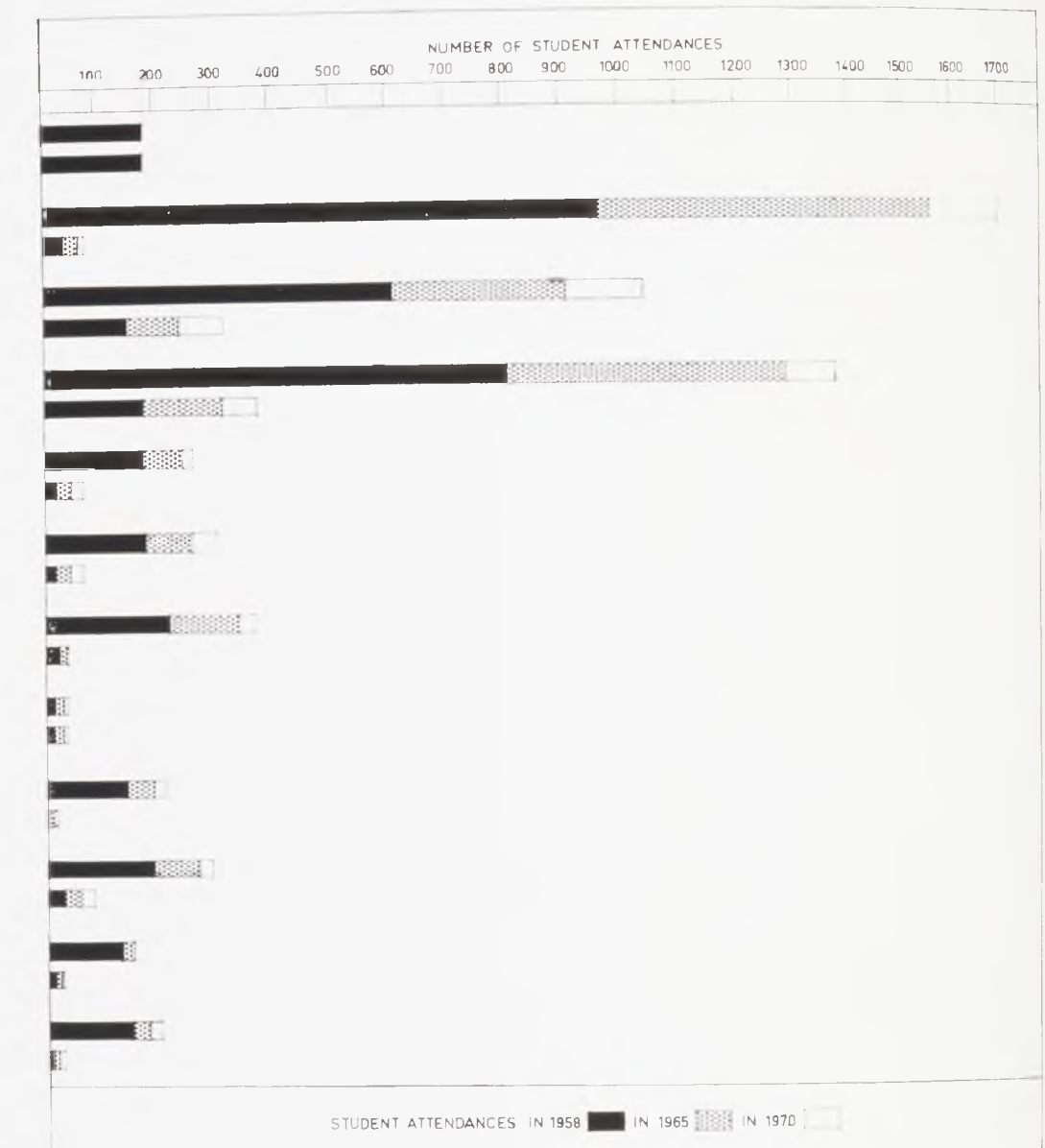
Bacteriology

1970
1958 %

B.Sc. General Studies	85	85
Mathematics	267	176
Physics	195	172
School of Chemistry	210	172
Botany	370	147
Zoology	350	160
Geology	148	164
Geography (Science)	272	272
Physiology (Science)	00	127
Biochemistry	272	144
Pharmacology	213	112
Bacteriology	332	122

18a-d Students attending departments in the Faculties of Arts, Science and Technology in 1958.

The upper scales show the total student attendances including students from other departments; the lower scales show the 'special studies' students only.



18d Technology

Civil Engineering

Mechanical Engineering

Electrical Engineering

Mining

Houldsworth School

Textile Industries

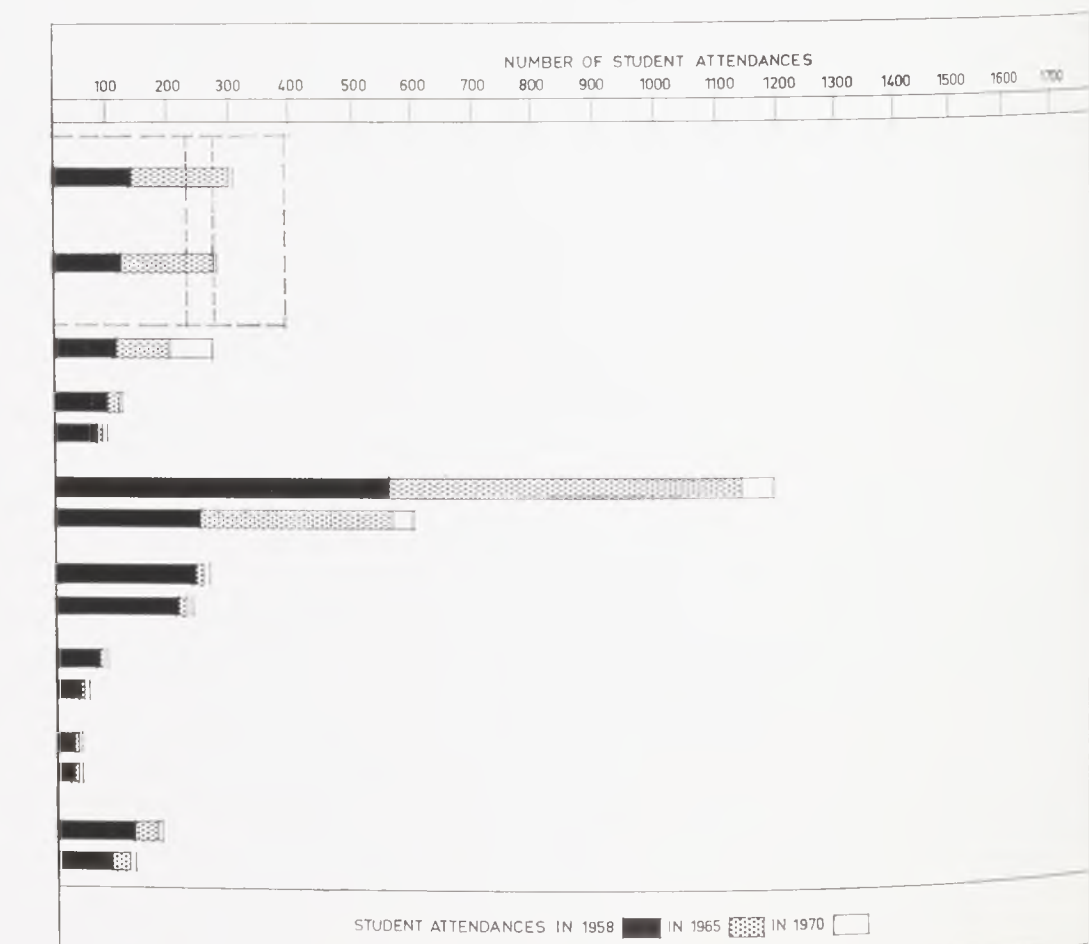
Colour Chemistry and Dyeing

Leather Industries

Agriculture

1970
1958 %

Civil Engineering	212	212
Mechanical Engineering	216	216
Electrical Engineering	237	237
Mining	100	115
Houldsworth School	246	202
Textile Industries	103	103
Colour Chemistry and Dyeing	108	104
Leather Industries	118	118
Agriculture	128	136



A study of Lecture Room requirements

- 1 Since lecturing is a method of teaching commonly used by all departments, the provision of the right type and size of lecture rooms – appropriately sited throughout the University precinct – is sufficiently important to justify a detailed study into the most constructive way to meet the need for this type of accommodation.
- 2 The size of audience attending lectures may vary from small groups numbering between ten and thirty students up to large groups of two hundred or more; some groups require lecture rooms with raked seating, or elaborate demonstration screens and benches, others need only flat floors. A range of different sized lecture rooms is, therefore, needed to meet this widely variable demand. Moreover, the number of students in a class is not necessarily related to the size of departments; some of the smaller departments, for instance, provide lectures to large groups of students attending from other departments. Some lecture rooms are used exclusively by the lecturers in the department to which the rooms are attached, whereas other lecture rooms are shared by several departments. Although there are good reasons for the exclusive use of lecture rooms by particular departments this may not always result in the maximum use being made of these rooms. Nor does it follow that, if lecture rooms are distributed on a departmental basis, the right type of accommodation will always be available; for it may be necessary to reach a compromise regarding the size, shape or equipment of these rooms in order to ensure reasonably economic use of the resources available.
- 3 If, on the other hand, lecture rooms are primarily regarded as common ground in a university it should be possible to plan for such a high level of utilisation as to justify the provision of a range of lecture rooms, no more in number than is necessary, but allowing a very wide choice in size, type and equipment to meet the varied demands of the different departments. The more widely lecture rooms are made use of by different departments, the more complicated weekly timetabling may become if the fullest utilisation is aimed at; consequently the planning of time-tables would almost certainly have to be approached from a synoptic point of view rather than from a sectional one. Nevertheless, we considered it more than justifiable to embark on a study of lecture room requirements for the University as a whole and not merely on a departmental basis.
- 4 The present use of lecture rooms was examined in three ways. Firstly, the type, seating capacity and geographical position of all existing lecture rooms (and of those already planned but not yet completed) was plotted on a survey plan of the University so that the present distribution of these rooms among the departments could be studied. Secondly, the total number of hours each room is at present made use of was recorded by analysing our enquiries concerning the courses and the

use made of space; this made it possible to establish the present occupancy, frequency and utilisation factors. Thirdly, the ideal size of rooms, and the number of hours of use made of them, was assessed from the available data; this was then compared with the actual size, and use made, of existing rooms (20a).

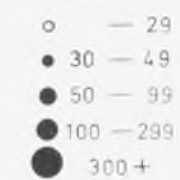
- 5 With the above information as a starting point, an assessment was made of the probable lecture room requirements for 1970 in the University as a whole. Based on the increasing numbers of both 'special studies' and 'attendant' students forecast for each department, an estimate was made of the likely increase in the size of various lecture groups for 1970; where these estimates produced a size of class exceeding the maximum desirable suggested in a particular department's 'Statement of Needs' the class was divided into separate, smaller units. (It was not possible, of course, to take into account at this stage any future developments in courses although it should be borne in mind that such changes might exert an appreciable influence on the need for different types or sizes of lecture rooms.)
- 6 The estimated demand in hours per week for rooms of different size and type was then summarized, taking account of the needs of all departments. This sum of the total demand had then to be translated into the quantity of lecture rooms of different size and type calculated to be needed in order to meet the demand; this translation cannot, of course, be a simple mathematical one since several important factors have to be considered. Firstly, the utilisation factor employed can be based on an average interpretation of the present utilisation of lecture rooms; this is a serviceable starting-point but inadequate for any ultimate conclusions to be drawn since, as has been referred to, the preparation of sample synoptic time-tables must be considered in order to arrive at a truly practicable utilisation factor. Secondly for various reasons, some departments may justifiably need a few lecture rooms reserved for their own exclusive use so that *ad hoc* lectures may be given which cannot be anticipated in weekly time-tables. Thirdly, a certain number of highly specialised and uniquely equipped lecture rooms may be required which, because of their nature, cannot be made use of by other departments and of which a high level of utilisation cannot reasonably be expected. Fourthly, the geographical position of lecture rooms becomes increasingly important as the University site expands otherwise these may be sited more than five minutes walking distance away from the students who are expected to attend in them.
- 7 Having approached the study of lecture room requirements from the several different points of view referred to, we arrived at a provisional forecast of the likely type and quantity of accommodation of this sort which will be needed by the University as a whole in 1970, assuming that the growth in student numbers, as at present forecast, materialises. We have not published this provisional assessment at this stage because

we consider that it should be used as a basis for further investigation of this problem and, more particularly, that sample time-tables should be forecast for the departments who would occupy the lecture rooms in order to calculate how much use could be expected of each room without the demand from different sources overlapping in time. This exercise, which should establish a practicable utilisation factor, considered in conjunction with the other factors which influence the quantity and disposition of lecture rooms, should make it possible to reach a realistic and economic assessment of the size, type and quantity of lecture rooms required throughout the University by 1970.

- 8 118T1, 118T2 and 119T1 are included in the Appendix; these tables record the size and type of lecture rooms at present existing or already planned and approved.



LECTURE ROOM SEATING



Faculty of Arts

- 1 Greek Language and Literature
- 2 Latin Language and Literature
- 3 Semitic Languages and Literature
- 4 English Literature
- 5 English Language and Mediaeval English Literature
- 6 French Language and Literature
- 7 Italian Language and Literature
- 8 German Language and Literature
- 9 Russian Language and Literature
- 10 Spanish and Portuguese Languages and Literatures
- 11 History (Mediaeval)
- 12 History (Modern)
- 13 Philosophy
- 14 Geography
- 15 Music
- 16 Theology
- 17 Education
- 18 Phonetics
- 19 Psychology
- 20 Fine Art

Faculty of Economic and Social Studies

- 21 Economics and Commerce
- 22 Social Studies

Faculty of Law

- 23 Law

Faculty of Science

- 24 Mathematics
- 25 Mathematics, Electronic Computing Laboratory
- 26 Physics
- 27 School of Chemistry
- 28 Zoology
- 29 Botany
- 30 Geology
- 31 Biomolecular Structure

Faculty of Technology

- 32 Civil Engineering
- 33 Mechanical Engineering
- 34 Electrical Engineering
- 35 Mining
- Houldsworth School of Applied Science
- 36 Gas Engineering
- 37 Fuel Science
- 38 Ceramics
- 39 Chemical Engineering
- 40 Metallurgy

- 41 Textile Industries
- 42 Colour Chemistry and Dyeing
- 43 Leather Industries
- 44 Agriculture

Faculty of Medicine

- 45 Anatomy
- 46 Physiology
- 47 Biochemistry
- 48 Pharmacology
- 49 Pathology
- 50 Chemical Pathology
- 51 Bacteriology
- 52 Experimental Pathology and Cancer Research
- 53 Medicine
- 54 Paediatrics and Child Health
- 55 Psychiatry
- 56 Surgery
- 57 Urological Surgery
- 58 Anaesthetics
- 59 Obstetrics and Gynaecology
- 60 Radiology
- 61 Medical Physics
- 62 Preventive Medicine and Public Health
- 63 Forensic Medicine
- 64 School of Dentistry

Other Departments

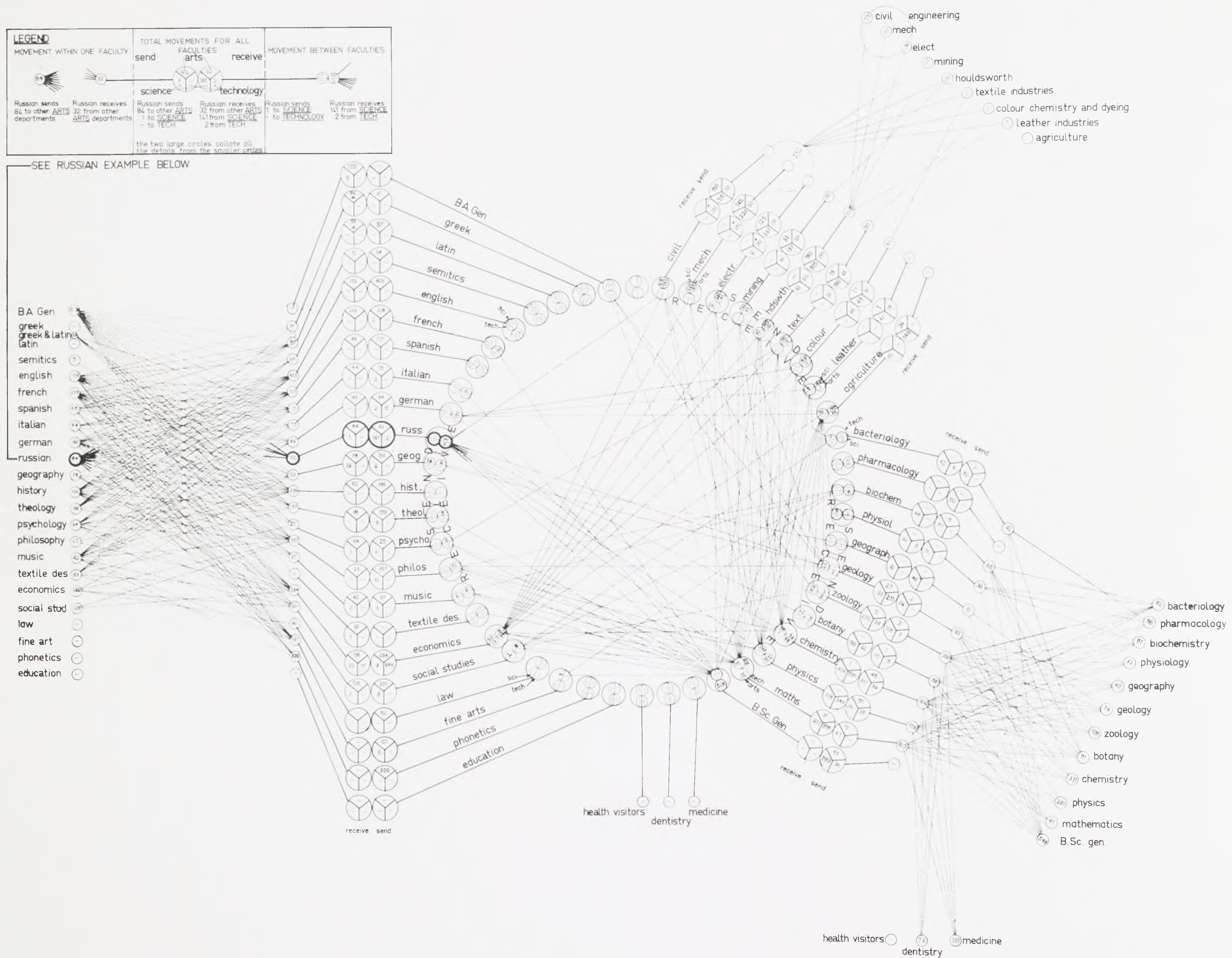
- 65 Institute of Education
- 66 Adult Education and Extra Mural Studies
- 67 The Brotherton Library
- 68 The Student Health Service
- 69 Physical Education
- 70 Photographer
- 71 Vice-Chancellor
- 72 Registrar
- 73 The Tutor of Women Students
- 74 The Warden of Women Students in Lodgings
- 75 The Warden of Overseas Students
- 76 The Lodgings Warden
- 77 Bursar
- 78 The University Appointments Board
- 79 Officers Training Corps
- 80 The Womens Royal Army Corps
- 81 The University Air Squadron
- 82 University House
- 83 The Students Union
- 84 Senior Common Room
- 85 Staffs Club

20a Survey of lecture rooms

Recording the geographical position and seating capacity of existing lecture rooms and of those already approved but not yet completed.

The relationship of departments

- 1 The relationship between departments has been studied from several points of view, but particularly the way in which the planning and grouping of buildings in the layout may be affected.
- 2 Since most students belonging to particular departments attend several others in order to study subjects included in their courses, it follows that the distance between certain departments may be a matter of some importance if time is not to be wasted in unnecessary movement. Fortunately the University site is reasonably compact and, even when this is extended to allow for future development, it should not take more than ten minutes to move from any one part of the site to another. Lecture periods in the University are timed to last 50 minutes in order to allow ten minutes between periods for the circulation of students; of these ten minutes, it is not reasonable to expect students to have to walk a greater distance between departments than they can cover in five minutes, since time should be allowed for collecting books, going up or down stairs, etc. It is, therefore, important wherever possible to plan the layout of departments so that the routes covered by the largest movements of students do not exceed about a quarter of a mile, although it is not very serious if a small number of students – on occasion – have to walk a little farther than this distance. Where it is not possible to plan the layout so that the numbers of students need to cover only short distances between departments, this may influence planning in time, rather than in space; for example, it may become necessary to plan the daily time-table to allow the lunch-break to intervene between sessions attended by a large number of students if these are held in parts of the University site remote from one another as this break would allow for the extra time required to get from one department to another.
- 3 The pattern of relationship between the various departments, in so far as this reflects student attendance, is extremely complex. We have attempted to analyse the movement of students between departments and to express this diagrammatically as a guide to the disposition of departments, in order to ensure economic and convenient circulation routes; because the University is clearly committed to the continued use of so much existing accommodation, it is not, of course, possible to plan for an ideal relationship between departments so that the most used circulation routes are the shortest – as would be possible in planning the development of a new university. Nevertheless, these exercises have proved useful as a guide to the siting of the new departmental buildings required. The diagrammatic representations of student movement illustrate the number of students who have to move between departments during each academic week; they do not indicate the frequency of movement which is, of course, much influenced by the departmental time-tables. An assessment of the frequency factor would be highly involved, but no doubt valuable if it could be carried out.
- 4 Where there is a close affinity between the subjects taught in different departments it would seem desirable to group these near to one another. This would not only simplify circulation but would make it possible to plan shared departmental libraries, common rooms and other facilities wherever it is thought desirable to do this in order to encourage informal contacts between staff and students on a wider basis than is possible within a single department.
- 5 Certain departments have close associations not only with other departments within the University but also with certain outside bodies. The inter-dependence between the School of Medicine and the Infirmary is obvious, as is the relationship between the Institute of Education and the teaching profession round Leeds, while the department of Adult Education and Extra-Mural Studies, as its name implies, is almost wholly devoted to activities outside the University proper. All these diverse relationships have been considered regarding their possible influence on the most appropriate disposition of the various departments in the layout.
- 6 The need for easy access to the Brotherton Library is of importance to all departments but most of all, perhaps, to the departments in the Faculty of Arts which, judging from surveys made by the Librarian, make use of books covering the widest range of subjects. This is clearly of importance in the planning of any new accommodation for these Arts departments.
- 7 The location of departments relative to the disposition of lecture rooms has been considered, particularly where the latter are to be shared rather than used exclusively by single departments.
- 8 Convenience of access between all departments and the central core of the University has also been considered in some detail and a survey has been made of the present density of circulation.
(78a, 78b, 78c, 79a, 79b, 79c, 80a, 80b, 80c, 81a, 81b, 81c.)



22a The Relationship of Departments

This diagram gives a general idea of the relationship of academic departments forecast by 1970. The circle of departments shows their relationship within different faculties and the columns outside the circle show the relationship of departments within the same faculty.

The circles include the numbers of students which any one department sends to, and receives from, other departments. The number of departments which send to, or receive from, any one department is shown by the lines converging on that department.

The departments with links to several others in different faculties are as follows: Russian and Philosophy with the faculty of Science; Economics with the faculty of Technology; Mathematics with several of the Arts departments other than the Language departments; Mathematics, Physics and Chemistry with all Technology departments; Agriculture with all Science departments. Those departments with most links within the same faculty are as follows: Zoology, Botany, Mathematics, Physics and Chemistry in the faculty of Science; the Engineering departments and the Houldsworth School in the faculty of Technology.

This diagram makes no attempt to express the movement of students between departments either quantitatively or geographically.

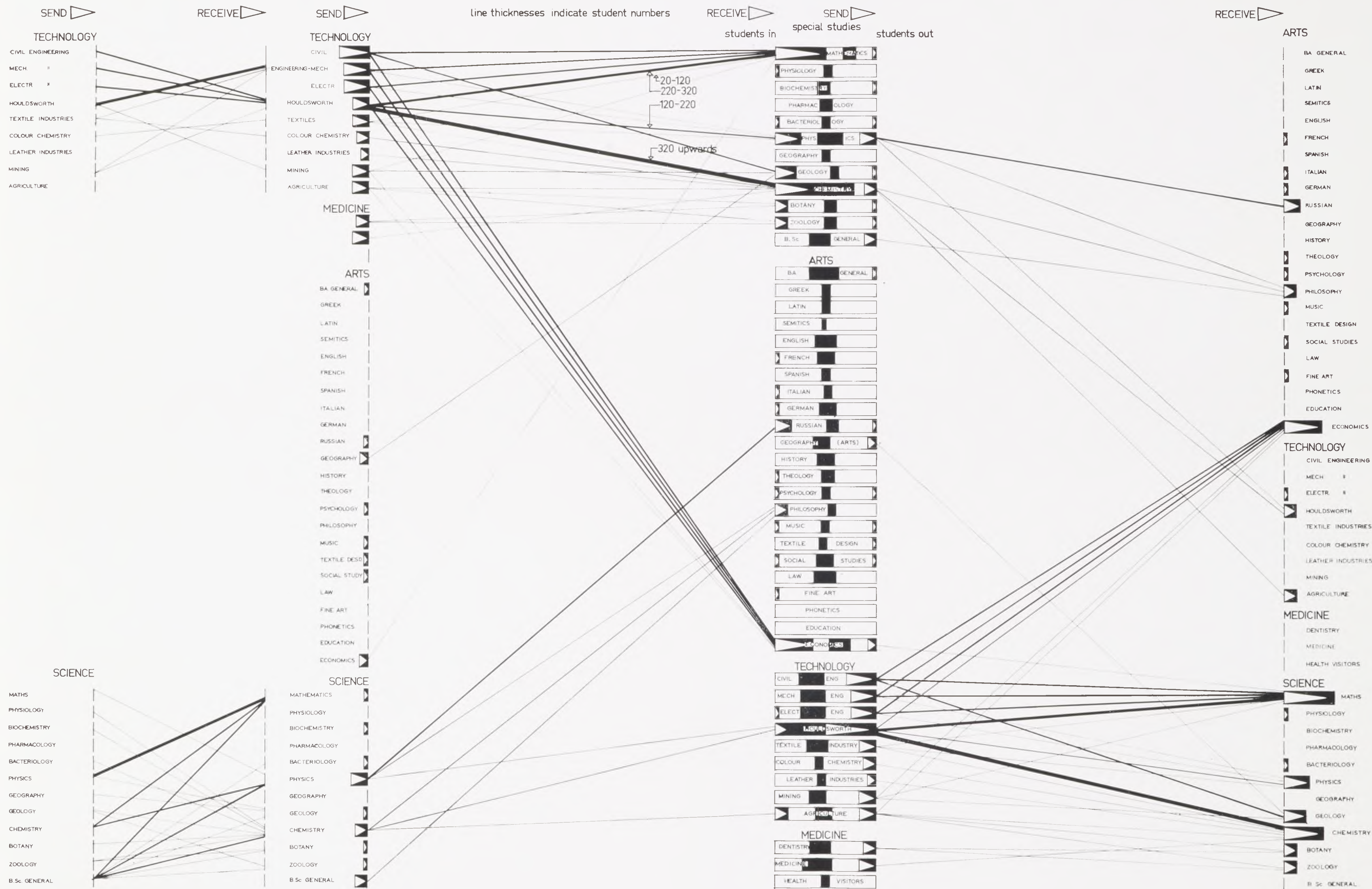
23a The Relationship of Departments

The central column indicates (in the width of the solid black rectangular block) the relative numbers of 'special studies' students in each department; the width of the 'arrow' symbols on the right and left edges of the central column indicates the relative number of students sent to, and received from, other departments of other Faculties.

The relationship between departments within the Faculties of Science and Technology have been entered on the left hand side of the chart. The number of students involved is indicated by the thickness of the lines linking one department to another.

The following relationships appear to be most significant. The Mathematics department receives large numbers of students from the Engineering departments and the Houldsworth School; even larger numbers are received from the Physics department. The Chemistry department receives large numbers of students from the Mathematics and Physics departments and even more from the Houldsworth School. The Engineering departments receive large numbers of students from the Houldsworth School.

Although the diagram indicates the quantity of students concerned in this movement between departments, it does not show either the number of visits per week or the amount of time occupied by students in various departments.





24a A survey of pedestrian circulation

revealing the need for a route across the cemetery from the Engineering departments and the Houldsworth School to the Union; the need to simplify the present routes communicating internally through the Chemistry department, the Parkinson building and the Old Yorkshire College buildings; the need for shorter and more direct routes to the Brotherton Library from several directions. This drawing also underlines the present remoteness of the Medical School and emphasises the need for shorter and more convenient routes between it and other parts of the University.

The calculated space requirements of departments

1 In the light of forecasts of student numbers for 1965 to 1970, the space requirements of departments have been calculated; the amount of teaching likely to be needed for 'special studies' students and students coming from other departments has been taken into account, as well as the needs of research. In making these estimates it has not been possible in the time available to interview personally all the Professors in all the departments. Those departments whose need for new buildings appears to be most urgent have received most attention up to date; it is intended that Professors in other departments will be interviewed in due course.

2 A brief outline of the most obvious needs of departments by 1970 is given below; preliminary schedules of accommodation are included in the appendices covering those departments for which new buildings are envisaged in the near future.

The Language Departments and Phonetics

3 It is planned that the Language departments and Phonetics (which include Greek, Latin, Semitic languages, English literature and English language, French, Spanish and Portuguese, Italian, German, Russian and Phonetics) will, in the near future, be accommodated in the new Arts building at present under construction. It is possible that eventually more space for staff rooms and seminar rooms may be required than has been allowed for. It has been assumed, at this stage, that this increase can be provided for by moving the departments of History, Philosophy and Fine Art out of the Arts building in due course; this will allow approximately 11,000 sq. ft. of additional space for expansion of the Language departments.

History, Philosophy, Geography, Theology

4 Both the History and Philosophy departments may have to provide considerably more service teaching in the future. Possible changes which may take place in the Economics courses suggest that the departments of History, Philosophy and Geography could usefully be accommodated with a group consisting of the Economics, Social Studies and Law departments, situated in a central position near the Brotherton Library. Although the existing Geography department appears to have sufficient space for its requirements, the building does not fit in well with the development plan as proposed; re-accommodation in a new building is therefore advisable. The Theology department has recently been housed in the new Arts building and it is assumed that its needs can continue to be met in this position.

Music, Fine Art

5 The Music department needs accommodation for its teaching activities which are concerned with the principles, theory and history of music. Another need to be met is concerned with the increasing activities of the University Music Society. It has therefore been concluded that new buildings should be provided for the Music department in a central position within the development plan. Although the Fine Art department has recently moved to the top floor in the new Arts block, this position is not ideal since it does not attract the casual visitor; in any case the department requires more space in the future and, more particularly, a site for its art gallery on a popular circulation route.

Department of Education, Institute of Education, Adult Education and Extra Mural Studies, Education Museum

6 The Department of Education provides post-graduate courses for graduates who wish to become teachers, while the Institute of Education provides for the needs of teachers' training colleges and of practising teachers. Some of the accommodation required by both these departments can be shared. An increase in the number of students in these departments is expected. The Department of Education, the Institute of Education, and the Department of Adult Education are at present housed in older buildings in positions likely to be needed for redevelopment and it is therefore proposed that new buildings should be planned for all three departments.

Physical Education Department

7 A new and enlarged department of Physical Education is needed and this is referred to later under the paragraph entitled 'Physical Education Centre' (27.1).

Psychology

8 The department is at present unsatisfactorily accommodated in old terrace houses. The increasing numbers of students, the present research work and the need for lecture facilities within the department indicate that new accommodation should be provided in the development plan.

Economics and Commerce, Social Studies, Law

9 The Department of Economics and Commerce is expecting to increase considerably its number of 'special studies' students and wishes to establish new post-graduate courses in management and industrial relations. The Department of Social Studies is providing new courses in political studies. A second Chair in Law has recently been established

and it is likely that this department will cater more widely in the future for students wishing to take up careers in industry. All three departments occupy houses in positions required for new development and make use of lecture rooms in the Parkinson building which will be needed for occupation by administrative offices if the re-grouping proposals are accepted. It is therefore recommended that new buildings for these departments should be provided in the development plan near to the History, Philosophy and Geography departments.

Mathematics (including the Electronic Computing Laboratory), Physics and Chemistry

- 1 A large increase in the numbers of 'special studies' and attendant students is expected in these departments in the future but only in the Physics and Chemistry departments will this involve a greatly increased demand for space. At present the Mathematics department teaches the largest number of students of any department and is likely to continue to do so. Accommodation for advanced work and post-graduate research is required on a different scale – and of a different kind – from that which exists at present. The large number of courses taught in the Mathematics department seems to require the use of a large number of lecture rooms for part only of the daily timetable. The group of lecture rooms needed for mathematics teaching could advantageously be sited in the development plan so that they could also be made use of by other departments. The present estimate of the space required by the Physics department is very approximate and depends upon a number of questions of policy which are still under consideration by the Senate. At the date when these investigations were carried out it was not possible to discuss in great detail the future requirements of the Chemistry department and it is assumed in the present plan that accommodation could be provided in the old Physics building, if and when this can be vacated. It is therefore proposed that new buildings should be erected for the departments of Mathematics and Physics.

Zoology, Botany, Geology, Biomolecular Structure

- 2 Increase in space for 'special studies' teaching and research work in these departments is likely to be required in the future. There will be some increase in service teaching which, in the case of Geology, will be substantial. The special needs of the department of Biomolecular Structure will need further review. The sites of the buildings at present serving these departments are required for other purposes and it is therefore proposed that new buildings should be allowed for in the development plan.

The Engineering Departments

- 3 The detailed study of future requirements has been based on an annual

entry figure of 100 'special studies' students in the Civil Engineering department, 90 'special studies' students in the Mechanical Engineering department, and 90 'special studies' students in the Electrical Engineering department. With the possible exception of unexpected changes in courses or developments in research work, it has been assumed that the buildings already planned and in the course of erection will provide for the departments' needs up to 1970.

The Houldsworth School

- 4 This group of departments includes Gas Engineering and General Fuel Science with Ceramics, Chemical Engineering, and Metallurgy; the School is expected to provide a large increase in teaching facilities and in order to discover how much extra space will be required for this purpose the capacity of the existing building should be closely studied before the programme for the building extension is completed. For the present it has been assumed that any expansion which might be needed will take place adjacent to the existing building.

Mining, Textile Industries, Agriculture

- 5 A small increase in teaching is expected in these departments but the present buildings, together with some small extensions already planned, appear to be adequate in area for the foreseeable future.

Colour Chemistry and Dyeing, Leather Industries

- 6 A small increase in teaching and additional space for research is required in these departments. The present buildings occupy land part of which is urgently needed for expansion of the book-stack of the Brotherton Library and the rest of which should be cleared as soon as possible to ease congestion on the site. These departments will therefore need new buildings in the development plan, which ought to be built as soon as possible so that the additions to the Brotherton Library are not unduly delayed.

The Medical School and the School of Dentistry

- 7 The forecast for the entry of students into the Medical School is constant and no sudden increase – or decrease – is anticipated. Because the existing medley of buildings is obsolete, insufficient and widely dispersed, it is intended that a new Medical School shall be built to house the Pre-clinical, Para-clinical and Clinical departments. The requirements of all these departments are varied and complex both in their relationship to one another and to the wards and departments of the Infirmary. In order to obtain the maximum use of the space required by the different departments it will be vitally important to make a careful and detailed assessment of the utilisation of all the space required and

to plan the new buildings so that they work well while at the same time providing flexibility in use for future development. A large increase is required immediately in the School of Dentistry which could be provided for by adding to the present building. It is recommended, however, that – because of the inescapable links between the Infirmary, the Medical School and the School of Dentistry – no new buildings should be planned in detail until a policy decision has been taken about the proposal included in this report to build a new Teaching Hospital designed to provide the most efficient combination of these separate, yet closely inter-related, institutions. The arguments in favour of this are put forward in a later section. In the meantime, as enlargement of the existing School of Dentistry is urgently required, the possibility of providing for this extension in temporary buildings should be considered; if this could be done, the present need would be met without building permanent structures which might inhibit a really satisfactory and efficient layout plan.

The Brotherton Library

- 8 Considerable enlargement of the Brotherton Library is required to provide increased reading room facilities, administrative offices, and an enlarged book-stack to contain a further 400,000 volumes together with carrels and studies on each floor. At present the Brotherton building is very much hemmed in by other departments and there is no possibility of providing any substantial enlargement without first demolishing some of these standing buildings. There are already some section libraries in addition to the main Brotherton, notably the Medical library, the Agriculture library, and the Institute of Education library. The possibility of establishing new section libraries in different parts of the University, as an alternative to enlarging the present main Brotherton building, has been considered; the librarian, however, strongly favours as much centralisation as possible both in the interest of maintaining the quality of library service offered to the students and in order to preserve administrative simplicity. He has agreed, nevertheless, that there would be much to be said in favour of establishing a separate undergraduate working library with seats for about 800 students and containing 30,000 to 50,000 books. The building of such a working library could start without having to wait for the demolition of other active departmental buildings. The provision in such a library of extensive seating accommodation would relieve much of the pressure on the main Brotherton Library which could then become the principal research library of the University. Additional administrative accommodation and a growing book-stack are proposed at the rear of the present Brotherton Library, together with a new entrance which would be more conveniently placed for access from the departments in the faculty of Technology and from the other new departments planned to the south. The advantages of this proposal are elaborated later in this report.

Physical Education Centre

- 1 A new Physical Education Centre is required which will include a sports hall with running track, a swimming pool and rowing tank, four gymnasia, six squash courts, etc. The Centre will provide not only for physical education but also for physical recreation. For this reason it is important to be sure that it is planned adequate in size and in the type of provision it makes to meet the needs of a much enlarged University; it is also important to remember that such a Centre will provide the only immediately accessible facilities for physical recreation for the 2,000 to 3,000 students who it is hoped will reside on the main University site. It might therefore be wise to consider the provision of a larger pool than that which is planned at the moment (or separate pools for swimmers, non-swimmers and divers), together with more provision of squash courts, fives courts, covered tennis courts and, in fact, any other accommodation which could be included to provide opportunities for physical recreation in a concentrated urban site. Although no direct link exists between the Physical Education Department and the School of Medicine it is suggested, for reasons elaborated later, that the Physical Education Centre could well be sited near to the new Medical Centre.
- 2 Providing adequate and appropriate space for the holding of examinations is always difficult to plan for in University development. Although examinations are an inescapable occurrence in a University Calendar, unlike every other academic activity, they only occur annually. It is not justifiable on economic grounds to build examination rooms or halls for use only during five or six weeks of the year; in consequence, other rooms have to serve the purpose and this very occasional need may often unduly influence the form and character of a room which, for its more usual purpose, would be better designed differently. Lecture rooms which have to be designed with flat floors in order to accommodate examination tables once a year are an example; it might often be preferable to design these as stepped rooms for lecture purposes in order to improve visibility of boards and demonstration tables and in order to create a closer sense of contact between lecturer and audience. On the other hand, certain large rooms, such as halls and gymnasia, must have flat floors for their main function and these are eminently suitable as examination halls. Nor is it necessarily inconvenient to those students who are not taking examinations if Physical Education buildings are used for this purpose in mid-summer because, at this time of the year, it is most easy to find opportunities for physical activities out of doors. For this reason, therefore, it is strongly recommended that attention should be given to the many advantages of building a good Physical Education Centre since this will also solve the problem of providing room for the holding of examinations while also freeing the design of lecture and other rooms from a possibly inhibiting influence.

The Student Health Service

- 3 The increase in the number of students in residence is likely to make greater demands upon the Student Health Service and, particularly, upon the accommodation in the sick bay. Because of the large number of students who are medically examined within a short time when they first come up to the University and because of certain other occasions when large numbers of students have to be treated collectively, it would be convenient to site the building to house the new Student Health Service near to the Physical Education Centre where on occasion use could be made of one or more of the gymnasia. This would not appear to be inconvenient so long as the Student Health Service building was not sited too far away from the centre of the University. The problem of staffing the Health Service may become more difficult as the University grows unless some arrangement can be reached with the Infirmary to supplement the nursing services and with the University Catering department regarding the provision of meals.

The University Union

- 4 The present Union building (nett area 27,000 sq. ft.) was built in 1939 when there were 1,700 students. The Union Building Advisory Committee have submitted a memorandum on their requirements indicating that an additional 48,000 sq. ft. (nett) would be required to cater adequately for 5,600 students. The details of the accommodation and its extent will need further review if the University is to grow in size to some 7,000 students.

A University Theatre

- 5 At present the only stage available for dramatic productions is in the Riley Smith Hall, which is also required for other major events including debates, meetings of Union Societies, Socials and Balls, Cinema and Exhibitions. There are eight well established dramatic groups within the University including several associated with departments of language and literature. Most of these are seriously handicapped by difficulties in booking the stage for rehearsals and performances and by the limitations of the Riley Smith Hall which was not designed primarily as a theatre. The growth of interest in drama will be enhanced by the facilities for teaching which are being provided in the new drama lecture room in the Arts Building. But this room was not designed for public performances and in view of this the pressure on the Riley Smith Hall is likely to increase. It seems, therefore, that a separate small University Theatre is very desirable for developing the work of the language departments in the drama lecture room and for productions by the dramatic groups. In addition such a theatre would release the Riley Smith Hall for purposes to which it is more suited and this would make a most important contribution towards the improvement of facilities within the Union.

The Senior Common Room

- 6 It has been decided that the problem of increasing catering facilities for staff and students could best be resolved by moving the present Senior Common Room out of University House in order to allow an expansion of catering within the existing building. The requirements of a separate Senior Common Room have been discussed with the Committee. The principal needs are for common rooms, a reading room, recreation rooms and dining rooms for 300 including a separate kitchen. The total gross area required is 36,000 sq. ft. which, preferably, should be sited in a central position in the development plan.

Accommodation for the Non-academic Staff

- 7 The requirements of the non-academic staff have been considered by the Welfare Committee of the University. They include a separate dining room and also a common room close to or forming part of the catering premises, where members of the non-academic staff could meet. The common room might possibly be capable of sub-division if required and a separate ladies' lounge and facilities for television and film projection would be desirable. Consideration will need to be given to the future of the Staff's Social Club whose present building will eventually have to be demolished. New accommodation for the Club should be as centrally situated as possible and should include social and games rooms, and a bar.

The Officers' Training Corps and the University Air Squadron

- 8 The Officers' Training Corps includes units for both men and women. The sites occupied at the moment will be needed for other purposes and new quarters are being planned within the development area.

The Christian Centre

- 9 The Christian Centre should be placed so as to be readily accessible from all parts of the University precinct and to members of the public. Its position and the question of accommodation cannot easily be settled until more is known of the future of Emmanuel Church; but the Centre must in any case include some accommodation for 'designated' ministers (i.e. those ministers of religion who have been designated by their respective communities to give help and guidance to those of their community who are members of the University), for a quiet room and for rooms where student meetings and informal discussions may be held. One of these could well be the library; or, alternatively, the quiet room might be a library.

The Administration

- 1 The main departments of the administration are at present in the Parkinson Building. When the new Arts Building is completed the teaching departments such as French, German, Spanish and Portuguese and Phonetics which are accommodated in the Parkinson Building will move into the Arts Building, and Mathematics into a new building. It has been assumed that in future all the administrative departments including the Tutor of Women Students, the Warden of Women Students in Lodgings, the Warden of Overseas Students, the Lodgings Warden, the University Appointments Board, and the University Photographer will be accommodated in the Parkinson Building with some internal replanning and improved lift facilities.

Central and Maintenance Services

- 2 The provision of additional steam-raising plant and the siting of the maintenance services is being reviewed. It may be necessary to provide additional boiler plant to cater for the new departments planned between the main University buildings and the Infirmary. At the same time, however, it would be prudent to consider the provision of electric services rather than extending the present steam mains. Particularly in the future, electric heating services may prove cheaper in first cost, as cheap to run and more convenient to adapt for changing needs.
- 3 The rapid growth of the University, which inevitably involves dispersal over a large site, increases the need to ensure that contact can be established between all members of staff as quickly and as easily as possible. There is, therefore, a paramount need for an adequate and efficient system of telecommunications if time wasting frustration is to be avoided and if the University is to work smoothly from day to day.
- 4 Properly equipped maintenance workshops are essential if buildings and equipment are to be kept in working order. Although it is intended that the old Fuel Building can temporarily be made use of as a maintenance workshop, eventually a building will be needed specifically designed for this purpose having an area of at least 15,000 square feet. Preferably, this should be sited near to the Parkinson building.

Shopping Centre

- 5 It is proposed that a small Shopping Centre should be built within the development area to serve the community which is likely to number over 10,000 people including academic, technical and domestic staff living or working in the University premises. The Centre might include the following; a bookshop, which should be regarded as essential in a University; a post office; a bank; a hairdresser; a barber; a laundrette; a dry-cleaner; a confectioner; a tobacconist; a newsagent; a chemist; and a grocer.

Section 2

Factors affecting the physical grouping of the new accommodation which will be required within the University precinct

The University site, its limitations and opportunities

Site surveys

The quick and the dead

The new ring road

Access and circulation

The type of accommodation required

The form of new buildings and of the space they occupy or define

A block of lecture rooms; the art and technique of communication

The new Medical School and the Infirmary

A Physical Education Centre

The Brotherton Library

A University Art Gallery

A place for congregation

A University Theatre and Concert Hall

The Senior Common Room

The Union and University House

Residential considerations

Catering

The Vice-Chancellor's Lodge



The University site; its limitations and opportunities

Planning considerations

- 1 The University's ability to expand depends, among other things, on the availability of land on which to build. The next phase of development will depend to a great extent on the City Development Plan and on the re-housing by the city authorities of the occupants of the obsolete houses in the area adjacent to the present University precinct.
- 2 In the City Development Plan which was approved by the Minister of Housing and Local Government on the 7th April 1955 the area zoned for the University was bounded by Woodhouse Lane, Reservoir Street, Lifton Place, Cromer Terrace, Virginia Road, Seminary Street and the proposed Inner Ring Road. It is likely that most if not all of the part of this area which lies south of Virginia Road and Lodge Street will this year be the subject of a representation by the Medical Officer of Health for clearance.
- 3 Quite apart from the need for sites for new buildings which may be timed to start in and soon after 1963, it is clear that developments on the lines envisaged in this report will require considerably more space than is at present zoned for the University. Consequently we have recommended to the University that when the City Development Plan is reviewed, as it shortly must be, approval should be sought for a westward extension of the zoning as far as Clarendon Road and that the city authorities should be approached about the possibilities of further extensions. The extension of the area to Clarendon Road would provide for immediately foreseeable needs but the further extensions are, we think, necessary to provide for the unforeseeable future needs by preventing other developments which might later prove to obstruct the University's further growth in the part of the city which it has occupied since its establishment.
- 4 We should also mention that in our opinion the area which the Medical Officer of Health is likely to be able to represent for clearance will not be sufficiently extensive even for the immediate requirements of the University if it is to play its part in meeting the national need for more student places and that exercise of the City Council's powers under the

Town and Country Planning Acts may have to be invoked to secure the acquisition of the land required.

Present layout

- 5 The form and the grouping of the existing buildings which comprise the University are familiar to all its members. Ranging from the Gothic revival of the old Yorkshire College buildings, through the neo-classic of the main Parkinson and Brotherton group, to the unclassifiable additions of the last decade, all these crowd round the old Woodhouse Cemetery and are confined by roads which at various times were thought to be adequate boundaries for the University as a whole.

The Woodhouse cemetery

- 6 The recent acquisition of the Cemetery by the University provides the opportunity to introduce a much needed generous open space within the existing University precinct.

Existing roads

- 7 In addition to University road which bisects the precinct (at present a bus route, although it is not expected to have to serve this function indefinitely) there are many other roads to the south serving the residential area which will shortly be cleared for University development.

The United Leeds Hospitals

- 8 South of the University area lie the four United Leeds Hospitals (the General Infirmary, the Women's Hospital, the Maternity Hospital and the Dental Hospital) with which the University Medical School is necessarily linked.
- 9 Perhaps the most singular fact about the University site is its nearness to the heart of the city; the most striking physical characteristic of the site is the steep slope in the ground from the Parkinson building down to the Infirmary below. In the exploitation of these two features lies the opportunity to develop a design solution unique to Leeds.

29a Photograph across the site reserved for University development

This photograph, taken from the roof of the new Arts Building, shows some of the streets of houses due for early clearance.



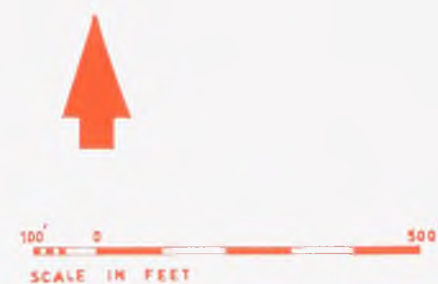


SITES CONTROLLED BY
THE UNIVERSITY



30a Site plan

Plan showing the contours of the University site and the properties at present owned by the University.

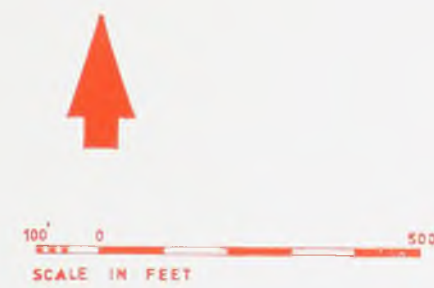


- BOUNDARY OF LAND ZONED FOR THE UNIVERSITY IN THE PRESENT 5 YEAR CITY DEVELOPMENT PLAN
- BOUNDARY OF LAND ZONED FOR THE HOSPITAL IN THE PRESENT 5 YEAR CITY DEVELOPMENT PLAN
- EXTENSION OF THE BOUNDARY OF LAND ZONED FOR UNIVERSITY USE AT PRESENT EXPECTED TO BE APPROVED



31a Zoning plan

Plan showing the existing zoning of land for University and hospital purposes and the extension of the University zoning which it is at present expected will be approved.



32a Clearance plan

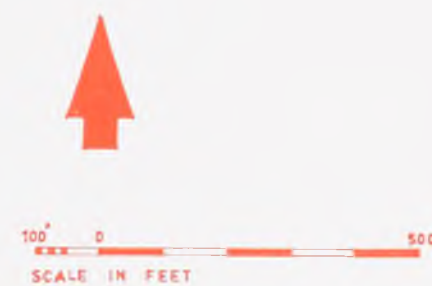
Plan showing parts of the University site which are to be the subject of a representation by the Medical Officer of Health for clearance.

Site surveys

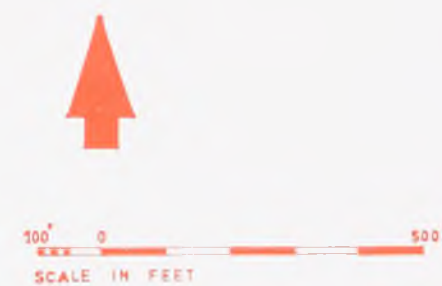
The Resident Architect to the University greatly assisted us by having surveys prepared for our information of all the trees on the site (including notes on their present condition) and of all the major underground services. These services are, for the most part, laid out to serve the existing development which will need to be cleared. The lines of underground services echo the pattern of the streets above them and will have to be largely abandoned because of their unsuitability to serve the new University buildings. This replacement of an existing system of utility services by a new one is a problem frequently encountered in the comprehensive redevelopment of a previously developed site. It is inevitable and costly; the surveys provided have enabled us to allow for the expense involved in the preliminary estimates.



33a A survey of existing sewers and water mains



34a A survey of existing heating and gas mains



EXISTING SERVICES
 --- M.V. ELECTRIC CABLES
 ——— E.H.T. ELECTRIC CABLES



35a A survey of existing electrical mains



36a A survey of the existing trees on the site

The survey listed the species, the approximate height and whether or not they are suitable for retention. The species include Ash, Birch, Chestnut, Laburnum, Elm, Beech, Alder, Holly, Plane, Lime, Mountain Ash, Cherry, Oak, Poplar, Sycamore, Thorn, Willow.



37a A general view of Leeds cemetery today

The Quick and the Dead

- 1 Although the old Woodhouse Cemetery has been acquired by the University, we have been instructed that it should not be regarded as being available for building development because of the need to respect the rights and sensibilities of the surviving relatives of those who are buried there. While we must accept this restriction in our terms of reference and, in particular, pay due regard to the motives giving rise to it which we should not, in any case, wish to ignore, the existence and future treatment of this cemetery is of such significance to any development plan that we feel obliged to put forward certain proposals.
- 2 The heart of the problem involved arises from the fact that these valuable nine acres of open space occupied by the dead are also needed by the living. We have, therefore, considered whether there is not some solution which would satisfy the needs of these rival claimants to the same plot of ground. It is not an uncommon occurrence in this very over-crowded island to find that land earmarked as a burial ground on the outskirts of a town gradually becomes – as the years pass – engulfed by the growth of the town itself. This has happened in Leeds; the Elysian scene portrayed in the accompanying sketch was an artist's vision of Leeds cemetery in the early part of the nineteenth century; the photograph at the top of the page is a typical view of this burial ground as it now exists which cannot be said to echo the sentiments commonly held for those who have died. Quite apart from the needs of

the University, therefore, something drastic should be done – in the interests of self-respect – to cultivate an environment which will more accurately reflect a people's attitude to their dead, than does the Woodhouse Cemetery as it now exists (37c, 37b, 37a).

- 3 So far as the life of the University is concerned, the existing buildings literally huddle round three sides of the Woodhouse cemetery, over which a number of the departments look. The prospect is depressing not because of it being a burial ground (there are many uncrowded country graveyards which are beautiful) but it is overcrowded, the stones and monuments have been erected in discordant disarray, and the whole has a depressing appearance of neglect. Yet these nine acres have been described as a potential 'lung' which should enable the adjacent University buildings which crowd round it to 'breathe'. A lung, however, like other parts of the body is only a beneficial organ if it can be used; the Woodhouse cemetery cannot be used in its present state, either for useful or enjoyable purposes. Yet the University of Leeds, especially if it is to attract two or three thousand students more than its present number, should include within its precinct a generous open space which is immediately accessible to the adjoining buildings. It would therefore be ideal if the area of ground occupied by the cemetery could be laid out as a garden accessible to the members of the University and, indeed, to members of the public since it is generally accepted that the grounds of the University precinct – so near to the heart of Leeds – should be open to its citizens (38b).

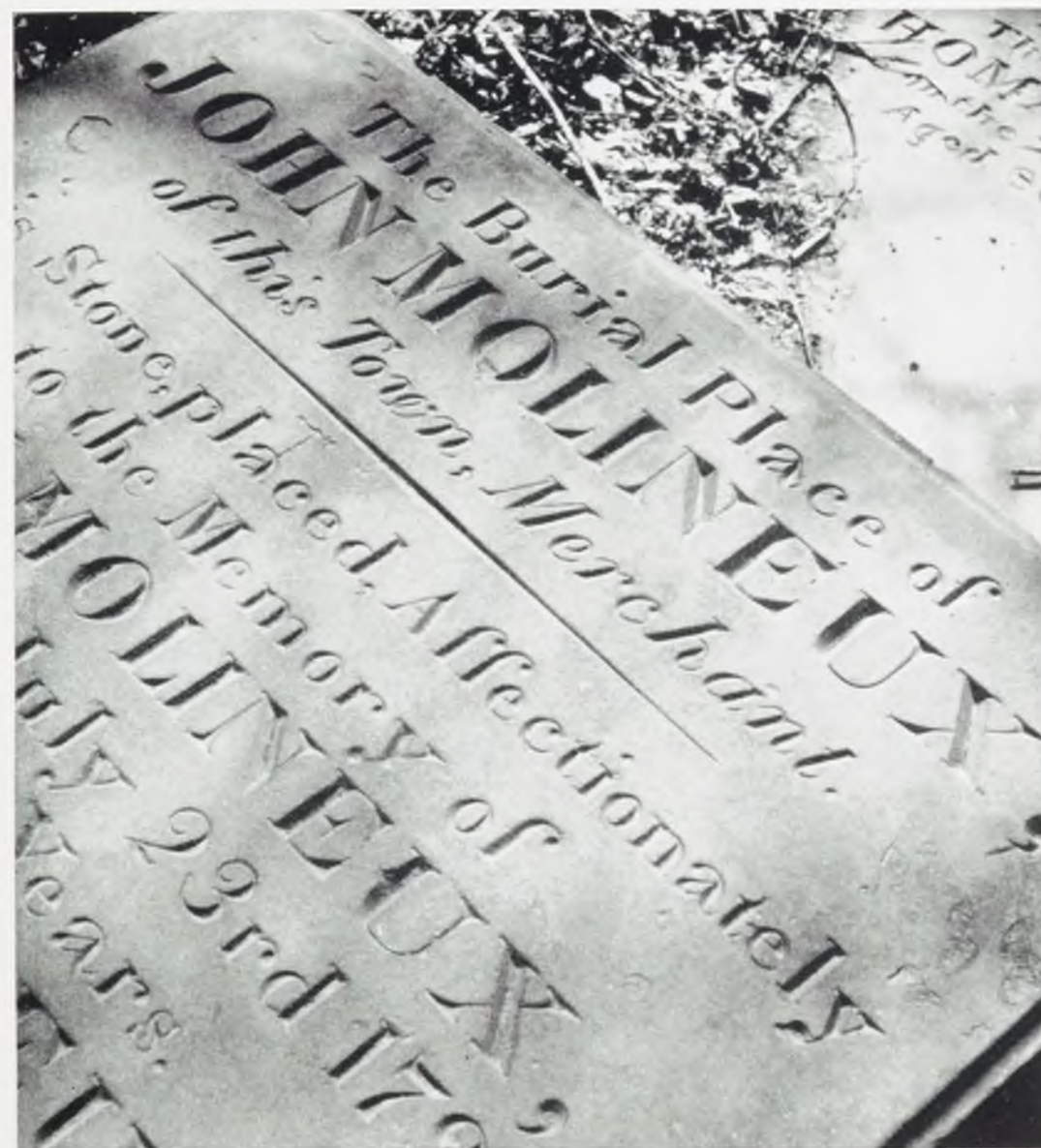
37b An early prospect of the Woodhouse cemetery



37c An aerial photograph of the Woodhouse cemetery



- 1 To achieve a coherent and satisfactory development plan for the University it should not be necessary to encroach on much of the land within the boundary of the cemetery for building purposes, except for a small portion of ground in the west next to Reservoir Street where houses formerly existed until they were recently pulled down to allow for the widening of this road. Any new buildings in place of these houses would have to be set further back from the road and would, in fact, need to encroach on the burial ground. Nevertheless, we recommend that the University should consider the desirability of building a block of study-bedrooms in this position for the following reasons. Firstly, once the burial ground is made presentable, this is an excellent site with a fine open prospect for students' rooms both to the east and to the west. Secondly, the need to provide as much new residential accommodation as possible within the precinct is stressed elsewhere in this report so that such an excellent site should not be ignored (particularly in so far as houses formerly stood in approximately the same position as now proposed). Thirdly, considerations of scale suggest that the burial ground, which could become the main University garden, should be enclosed at the west end with a long terrace block which would echo



38a A Gravestone

Old gravestones used as pavings in pedestrian areas not only continue to serve as memorials but are also richly decorative.

the scale of the new Engineering blocks now nearing completion in Woodhouse Lane, as well as the main Parkinson and Brotherton building at the east end. (The garden, thus walled on three sides, would be much less enclosed on the south side where the demolition of the old wall and certain obsolete buildings would allow the space to flow freely between those that remain expressing the culmination of the precinct downhill to the south.)

- 2 Having reached the conclusion that, both out of respect for the dead and in recognition of the present needs of the University, this ground should be improved and made use of, we considered how this might be done without offence. We suggest that, except where the small amount of rebuilding is proposed, the actual graves should be undisturbed – unless living relatives wish to have them removed – but that the stones and monuments should be removed elsewhere. Where the small area of building is located we suggest that the graves should be taken up and moved elsewhere. For this purpose a certain part, or parts, of the University could be set aside for the reinterment of those graves which have to be moved. We have in mind the open spaces between some of the buildings designated to remain unbuilt upon which – like the floors of many churches – could be paved with some of the old grave-stones from the cemetery; another location for reburial might be amongst the trees in the open space planned by the City Engineer on the north-east of part of Woodhouse Lane flanking the main approach from the city centre to the Parkinson building which could thus become a veritable 'sacred grove'; such graves marked by small stones set flush with the grass, would be a far less crowded resting place than the present cemetery. The walls of the Classic Revival chapel in the centre of the cemetery could be lined with the head-stones of those whose relatives might prefer these to remain within the cemetery boundary. Many of the obelisks could be re-erected to flank a new path or could be appropriately arranged elsewhere within the precinct; some of these examples of funerary furniture have sufficient character to justify their retention apart from sentiment (38a).

Conclusion

- 3 It is not unusual in towns for burial grounds to be converted for use as public gardens due to the pressing demands for living space. This conversion is sometimes achieved with the aid of legislation – either existing or as the result of the passing of a special Act of Parliament – and this course understandably carries with it the risk of rousing strong sentimental opposition not always confined to the surviving relatives of the buried. To resort to legislation may be necessary in this situation, for it is not reasonable for the dead to inhibit the growth and development of the living – nor indeed can we believe that they would want this. How much better would it be, however, if the City and the University of Leeds could agree to take positive steps to improve the cemetery and

thus to create a new green heart to the precinct on the lines suggested. Some of the graves could be moved to less crowded sites to be specifically preserved as open spaces, the head-stones and monuments could be moved, many to be re-used as pavings thus still preserving the records inscribed on them, the cleared surface of the ground could be laid out with grass, most of the existing trees would remain, and the walls of the cemetery could be pulled down so that this new garden would flow out to meet the adjacent buildings. By offering such an improvement to the graveyard, alternative sites for the limited number of graves which might need to be moved – and by undertaking to keep the garden above the burial ground tidy – the response of surviving relatives might reasonably be expected to be one of welcome rather than opposition. In this way, we feel, the needs of the quick can be reconciled with respect for the dead.



38b Graves in the Woodhouse Cemetery



39a

The new Ring Road

1 The ring road which is to be constructed as part of the City redevelopment plan is designed to follow a route which will inevitably split the University site from the Infirmary and the Civic Centre of Leeds including the Civic Hall, the Town Hall, the Law Courts and the new College of Technology. A new main road designed to carry a large volume of traffic has the effect of separating the two parts of a town which it divides – much as rivers and railways have done in the past. In the limited context of medical education it is, to say the least, unfortunate that the Medical School within the University precinct should be physically divorced from the Infirmary; in the wider context of a University growing in size and importance within the City of Leeds, the introduction of a physical barrier between the University precinct and the civic heart of the town – particularly when both are in fact contiguous – would be a brusque dismissal of the opportunity to express a close union between 'town and gown'.

2 The functional need for this new traffic route has, however, been established by the City Engineer. The possibility of alternative routes has been discussed – including one which, by following Clarendon Road and Reservoir Street, might embrace the whole University precinct as well as the City centre – but these are not practicable. If the proposed traffic route is inviolable there only remains the possibility of reducing the divisive effect of a new road while retaining its necessary function as a traffic artery. Having discussed this matter with the City Engineer, we are of the opinion that the new road should be constructed below ground for a large part of its length so that the two precincts of the University and the City centre can be united at ground level. This solution will, of course, be more expensive to construct than a road at ground level but would nonetheless be justifiable on planning grounds because of the easy pedestrian communication which will be maintained between the University and Infirmary sites, because of the more flexible layout of the buildings on both sides of the new road which would otherwise be inhibited by its curved route, and because use can

be made of the ground above the underpass which otherwise would be lost. A precedent for this is familiar in the case of railways which frequently pass underneath sections of towns. There is no insuperable difficulty about the construction of an underpass from a technical point of view. It might be necessary to introduce artificial ventilation although even this is by no means certain since the covered section of road as proposed would only be about 1,200 feet long. If the traffic moving in each direction is separated by a continuous central wall the passage of vehicles might alone induce sufficient air movement. Otherwise it would be possible to introduce a few ventilation openings in the roof of the underpass – provided these were not too frequent or too large.

3 It may be argued that this new road can easily be crossed by foot-bridges or pedestrian underpasses which would not involve as much expense as a 'cut and cover road'. However, nothing less than covering over a large part of the road would reduce the disturbance caused by the noise and smell of traffic – particularly on a rising road where low-gear driving must be expected; nor does there appear to be any other way to overcome the psychological barrier caused by an open highway where the conflict in scale between a pedestrian precinct and a large volume of motor traffic would be irreconcilable.

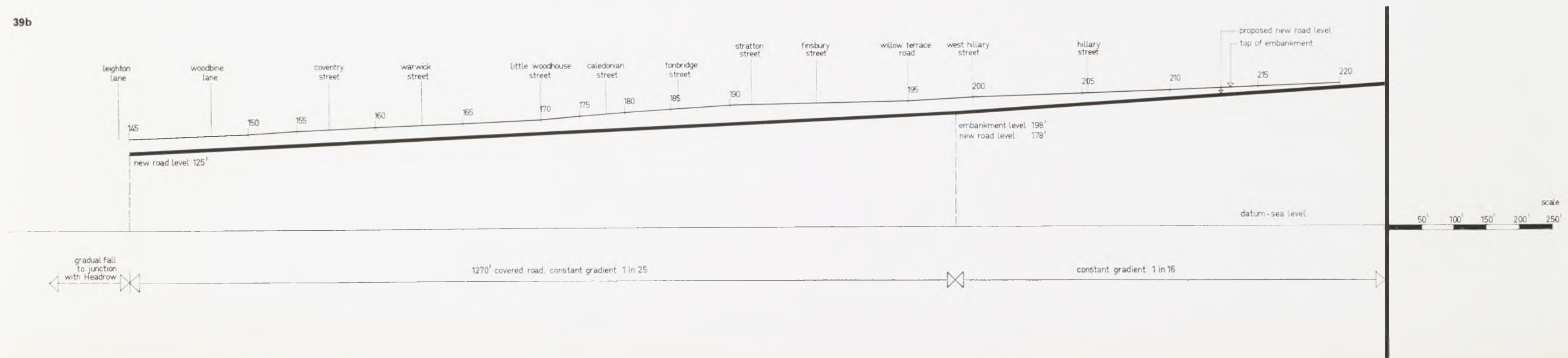
Illustrations showing

39a Photograph of entrance to London Airport underpass

This photograph of the entrance to the underpass under the airfield which leads to the passenger terminal is indicative of how the new Ring Road could be built in Leeds so that the flow of traffic along it would not disturb the pedestrian precinct above. At London Airport the underpass is constructed in four sections, two carriageways and two cycle tracks.

39b Possible level of new ring road

Drawing of a longitudinal section taken along the centre line of the proposed new Ring Road showing the levels of the carriageway at various points which could be adopted if it was sunk below ground level as suggested.





40a The traffic problem within a city



40b Cars parked within a university precinct

40c Pedestrians in Venice

The piazza San Marco has been described as 'the grandest drawing room in Europe'; it epitomises the civilised environment which only a city can provide. The creation of such an environment depends not only on the architecture (or the climate) but, firstly, upon the acceptance of pedestrian precincts from which traffic – and parking – is rigorously excluded.

Access and circulation

- 1 The problem of providing adequate access to all the buildings must be considered in the light of the character and atmosphere which it is hoped to cultivate within the boundaries of the University. A gradual accretion of paths, roads, loading bays, parking spaces, sheds, temporary building additions, etc., is not likely to contribute to the idea of a university as a place of special value. If the intention is to create a precinct within which the buildings are disposed in the landscape in such a way as to be both convenient and delightful to those who move about it (including not only members of the University but also the citizens of Leeds since it is generally accepted that this precinct should be open to the public) then the access and circulation problem must be kept in perspective as a part of the whole picture but not as its dominating feature.
- 2 That the site of the University should become a pedestrian precinct seems highly desirable since all the departments are within easy walking distance of each other. It is not necessary for those arriving by car to be able to drive up to the entrance of every department, much less to leave their car outside the door as if it were a piece of left-luggage. So long as there is adequate access to the precinct as a whole for motorists and so long as there is a place to park, a few minutes' walk to a particular department should be acceptable – particularly if this can be largely under cover and through pleasant surroundings. It is, of course, necessary to be sure that the occasional access needed for trade deliveries is

satisfactory (as well as for fire appliances in case of emergency); this can be ensured by reinforcing the ground under paved areas and then to limit such access to occasions of absolute necessity.

- 3 Probably the most important provision needed to meet the requirements of the private motor vehicle is not of roads so much as parking space off the roads. If cars are parked in the open they occupy an enormous amount of ground (about one acre is required for every 200 cars); this ground is valuable, cannot normally be used for other purposes, looks unsightly enough when full of cars and bleak when empty. Yet one must accept the fact that during the next few years private ownership of cars – even amongst students – will continue to grow very quickly and that cars will have to be parked somewhere when not in use. It is estimated that parking space for as many as 3,500 cars will be needed within the next decade to serve the various users of the University precinct including students (both residential and non-residential), the academic, administrative and maintenance staff, and the many daily visitors to the University. The possible provision of either covered or multi-storey car-parking on the perimeter of the University precinct has therefore been considered which has led to the conclusion that several acres of land should be allocated for this purpose. The cost of building multi-storey car-parks is not thought to be justifiable; however, car-parks at ground or basement level could be covered with a concrete roof so that the site area above could be put to additional use in a way which would be both more economic and more sightly. The need to provide flexible accommodation for research purposes is referred to elsewhere in this report

41a 3,500 parked cars

It has been estimated that as many as 3,500 cars may have to be provided with parking spaces or garages within the University and hospital precinct. This photograph shows what 3,500 parked cars look like and the vast amount of ground they cover; it illustrates the magnitude of the problem and underlines the need for a solution which will work without being unsightly.



41b Overlooking parked cars

This view over a car park, from within a building, is a warning of how cars might occupy most of the open space between the new University buildings, unless a better solution to the problem is adopted.

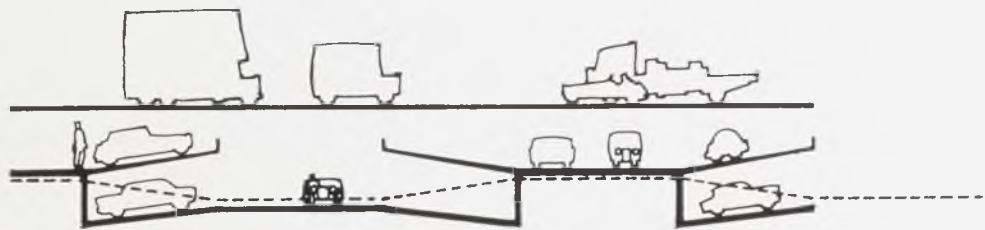
and the convenience that accrues from planning single-storey buildings for this purpose above a basement is elaborated more fully.

- 4 Where the concrete roofs covering the parking area are not required for superimposed light structures, they can be paved or laid out with lawns. Wherever parking spaces are covered with a load bearing roof, dual use can be made of the site; service access and car storage can be confined below the deck while above the space can be put to practical use or can form part of the landscape.
- 5 For internal distribution of small equipment throughout the University site we propose that light, electrically powered trolleys should be used such as are familiar in the hands of milk roundsmen. These have the virtue of being convenient, economic, and quiet in operation. They can easily run over pavements and do not require roads designed for heavy traffic. They would also be useful for the distribution of food from central kitchens to dining rooms and for the collection of refuse from the various departments for delivery to one or more refuse chambers situated on the perimeter of the site from which collection can be made by the public refuse vehicles.
- 6 It is therefore proposed that all through roads across the site should be closed, that access for vehicles should be limited to a few strategic points, where porters would be stationed to prevent unauthorised access by vehicles and that most of the car-parking facilities should be covered.

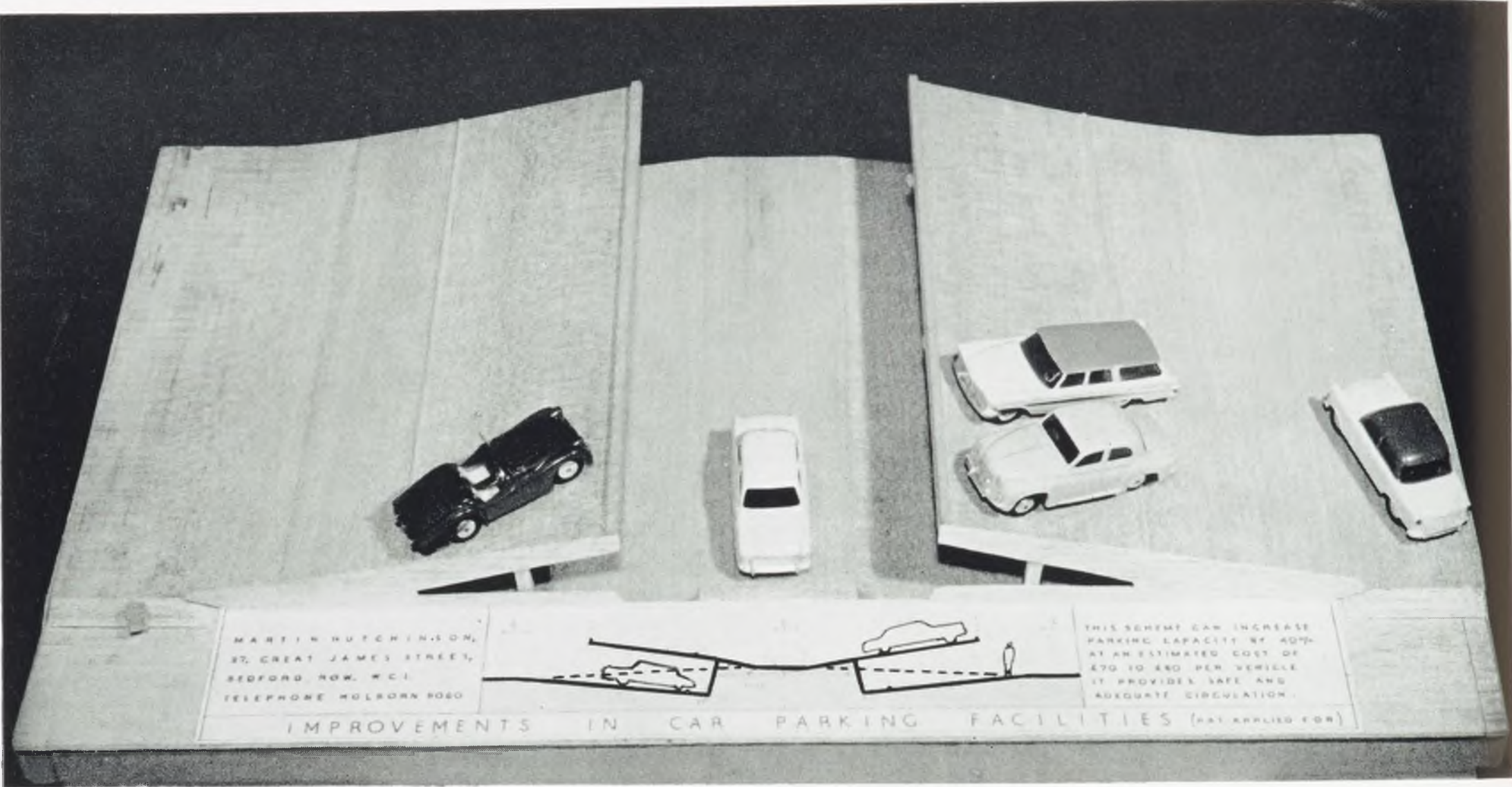


42a An ingenious scheme for car-parking

This scheme for increasing the capacity of a car park by about 40% without building a full additional storey was designed by Mr. Martin Hutchinson and exhibited at a recent exhibition on car parking organised by the British Road Federation. The underlying principle has been applied in some of the car-parking proposals included in this report where the changing level of the ground has been exploited to increase the density of parked cars.



42b

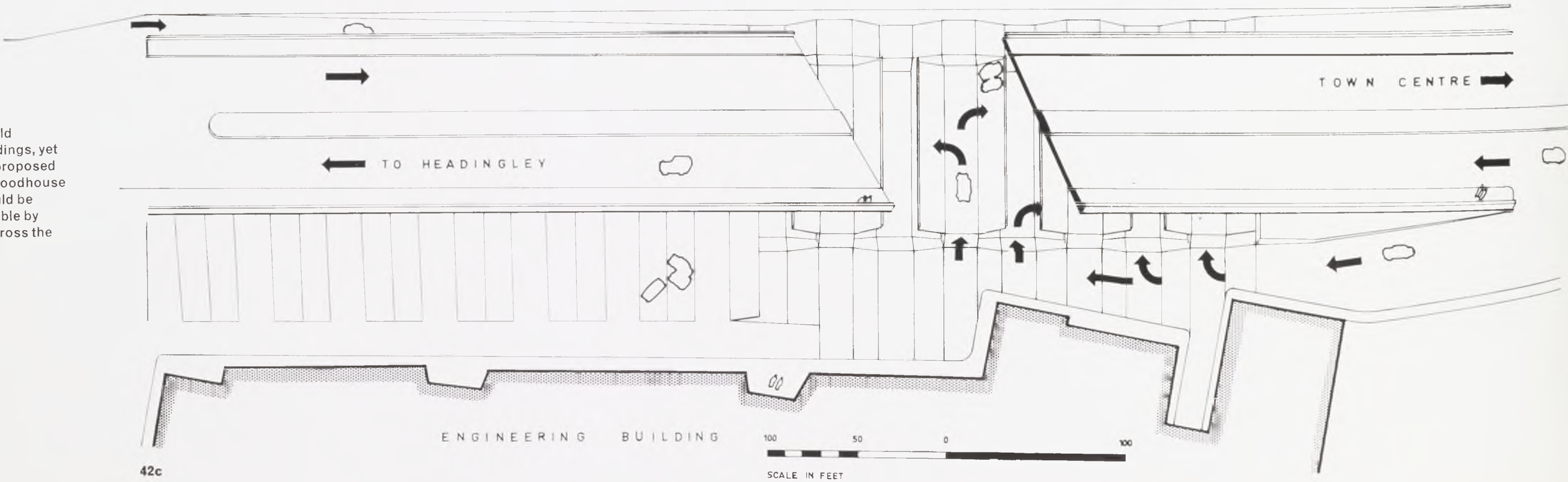


Provision for car-parking near the Faculty of Technology

Considerable provision for car-parking should be made near those important and busy buildings, yet there is little room available. It is, therefore, proposed that, when the improvements intended for Woodhouse Lane are carried out, car-parking space should be constructed under the new highway, accessible by ramps designed to avoid right-hand turns across the main road traffic.

42b Longitudinal section through road.

42c Cut away plan showing circulation.



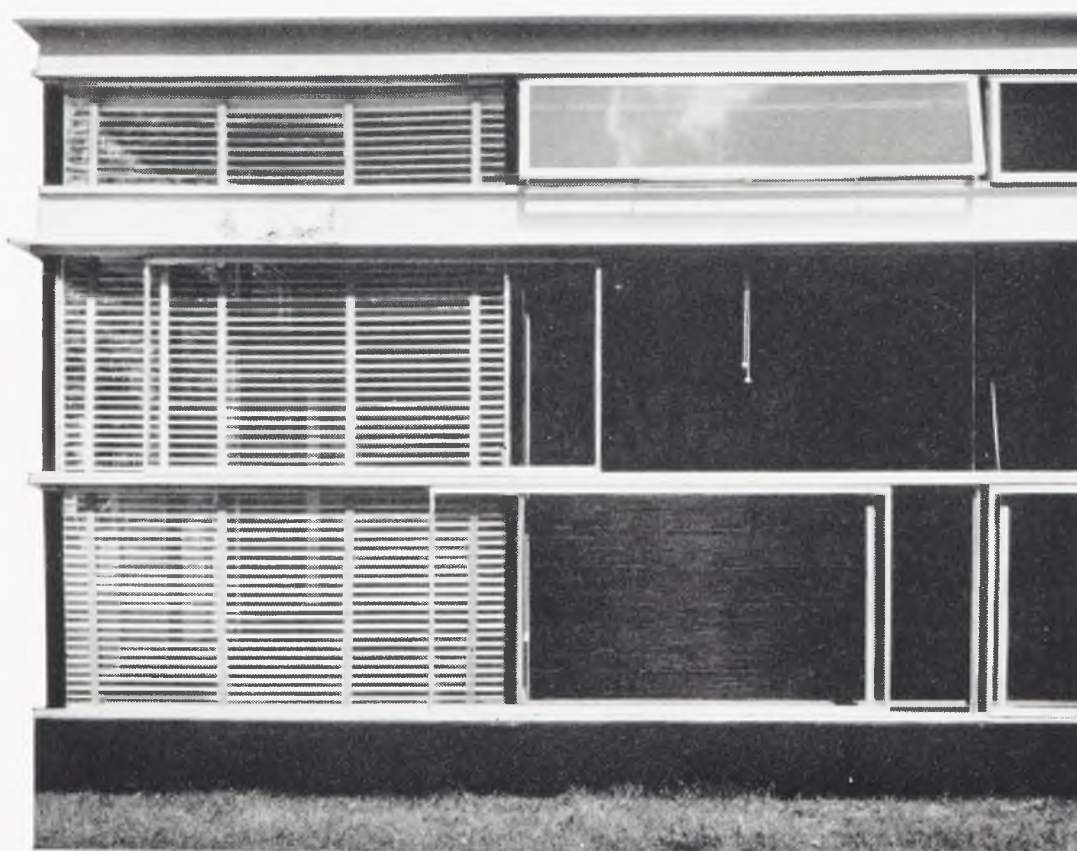
42c

The type of accommodation required

- 1 The many varied types of accommodation required to house the academic departments can be broadly classified in one of two ways; either they are finite and virtually unchanging in the purpose they are to serve or they need to be flexible to meet ever changing requirements.
- 2 The formal teaching spaces including lecture rooms, seminar rooms, reading rooms, staff rooms, etc., can be designed to be appropriate for functions which will not change to any large degree. Certain laboratories however – particularly if they are to serve the needs of research rather than to serve undergraduate teaching purposes – can only be designed to meet immediate requirements in the knowledge that these may change fundamentally within a very few years; since these laboratories require only adequate space, adequate working conditions, adequate services, and adequate protection from the weather, they should be designed with their temporary and limited purpose in mind. So long as they keep out the weather and ensure the right physical conditions, they should be easy to alter – easy to dismantle completely if necessary – and should provide for the easy introduction of any likely services.
- 3 We propose, therefore, that the finite accommodation should usually be provided in permanent multi-storeyed building, generally limited in height to four storeys above the mean ground level so that the need for passenger lifts can for the most part be avoided; changes in ground level will allow the introduction of further day-lit storeys at lower ground level.
- 4 Many types of research require light umbrella structures which can be changed, extended or pulled down as requirements alter. One of the greatest expenses involved in building multi-storey research departments arises from the need to set a finite size to a building which is designed to house an activity in no way finite; a further complication arises from the need to anticipate every form of service which can conceivably be required in the future and to introduce these into the fabric of the building whether they will be immediately required or not. It is our view that if research buildings can be planned as single storey, steel framed structures erected on the concrete roof over a garage this will be an extremely economic and practicable solution. The garage will not only serve as a covered car park but will also contain, suspended from the ceiling, all the services as and when required by the research departments above so that this basement serves both as a most convenient garage and as a vast service duct running under the whole of the research departments. If the soffite of the concrete floor is marked to indicate the position of the reinforcing steel, holes can be bored through the concrete between the lines of reinforcement to accommodate branches from the service runs leading directly up to laboratory benches, machines, equipment, etc., in the research building above. A

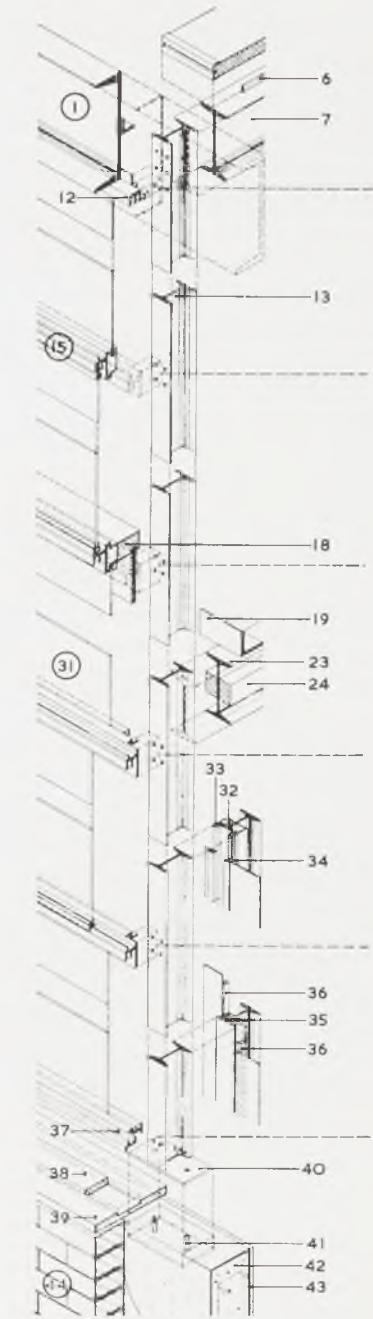
43a Building designed on a modular basis

illustrating a type of building which is quick to erect, alter or dismantle yet which provides weather protection, thermal insulation and daylight control.



Key

- 1 R.S. Channel fascia.
- 6 Flats locating wood-wool slab roof.
- 7 R.S. roof beams.
- 12 Head member of sliding window.
- 13 R.S. stanchion mullion.
- 18 Aluminium transome.
- 23 R.S. Floor beam.
- 24 Bearers for floor joists.
- 31 Opaque panel.
- 36 Glazing beads.
- 37 Aluminium sill member.
- 40 Stanchion base plate.
- 41 Rag bolts.



43b Cladding detail

illustrating elements combining the structural supporting members with the cladding of a building designed on a modular basis for dry assembly.

particular advantage of this proposal would be that, while room would be provided for the installation of any service required, none would have to be installed until absolutely necessary. If the research building is planned on a modular basis, and the structural system is a steel frame bolted together, changes could easily be carried out as required and yet this light umbrella type of construction could be of good appearance. If, in years to come, no further use existed for this light structure, being of easily demountable steel it would at least have some salvage value; the cleared concrete floor could either be paved or laid out as a lawn – the garage underneath remaining in use.

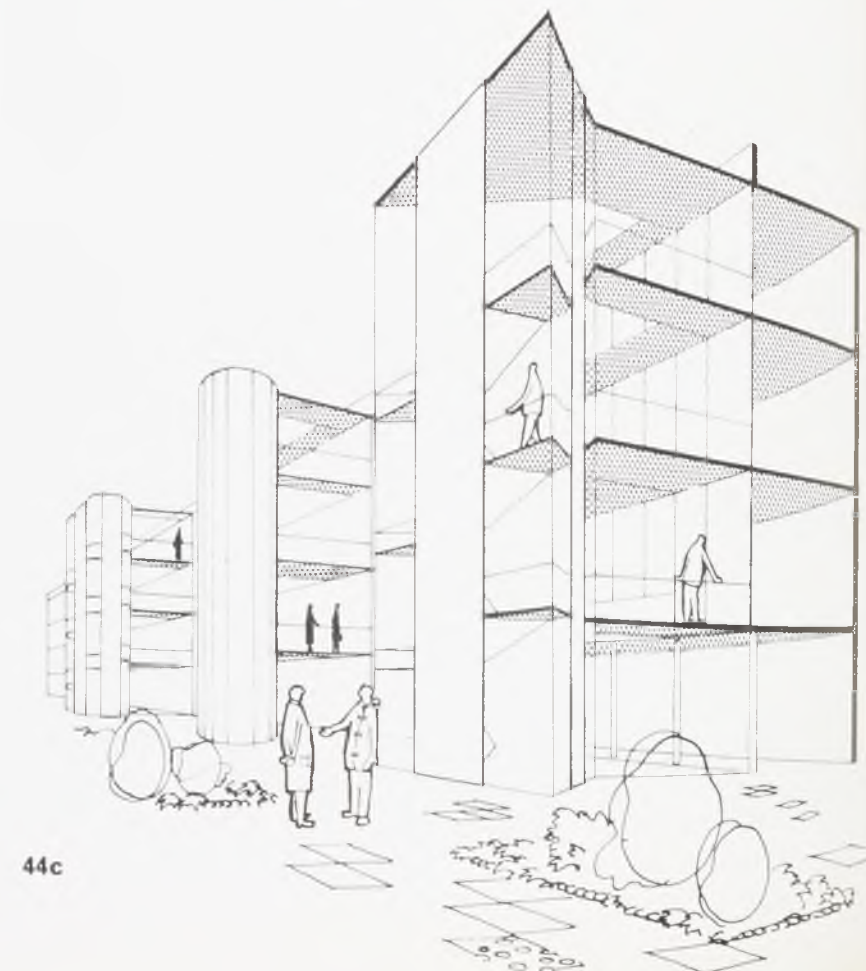
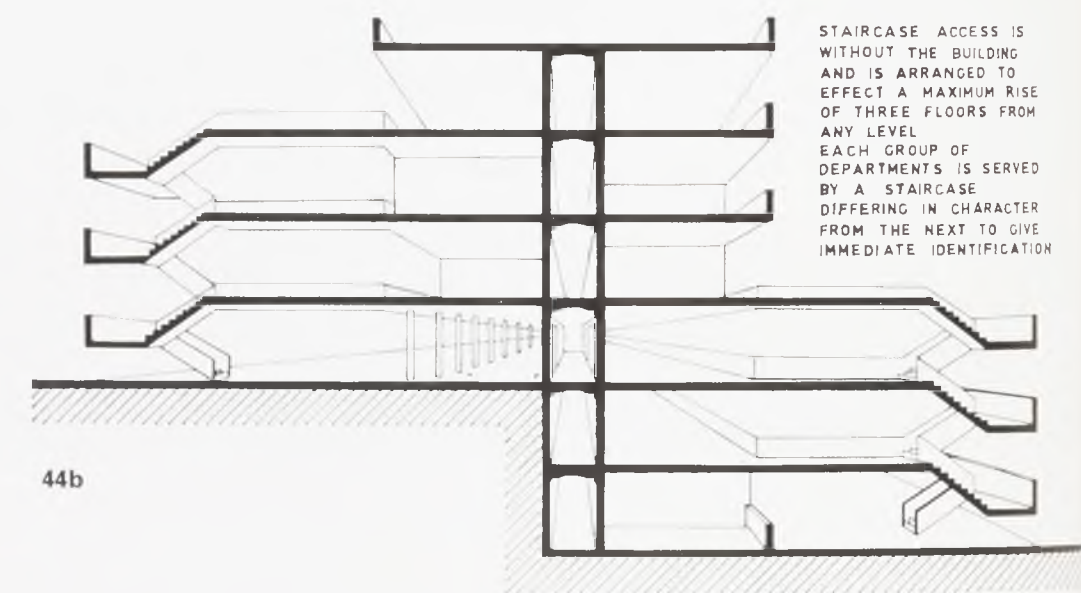
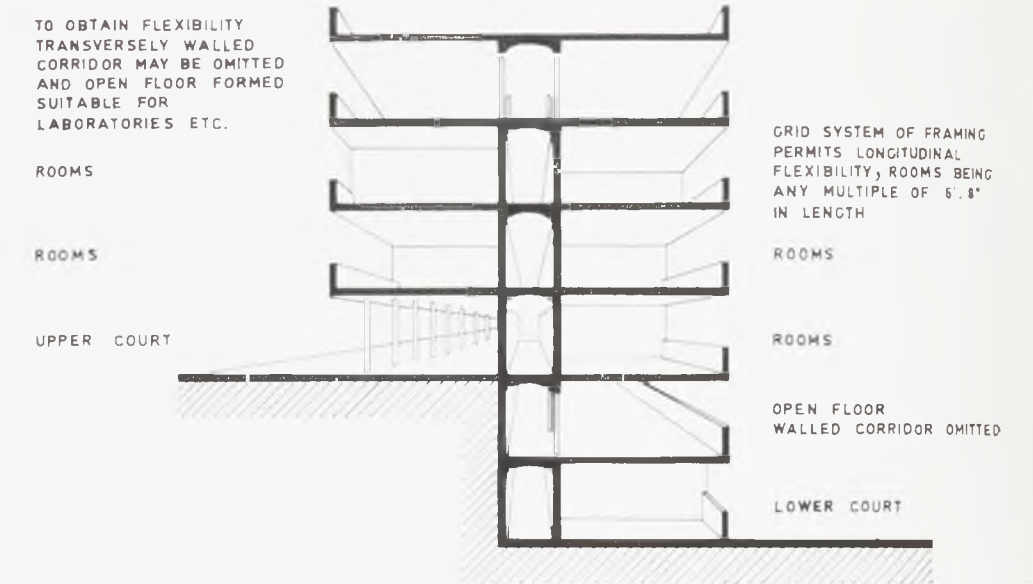
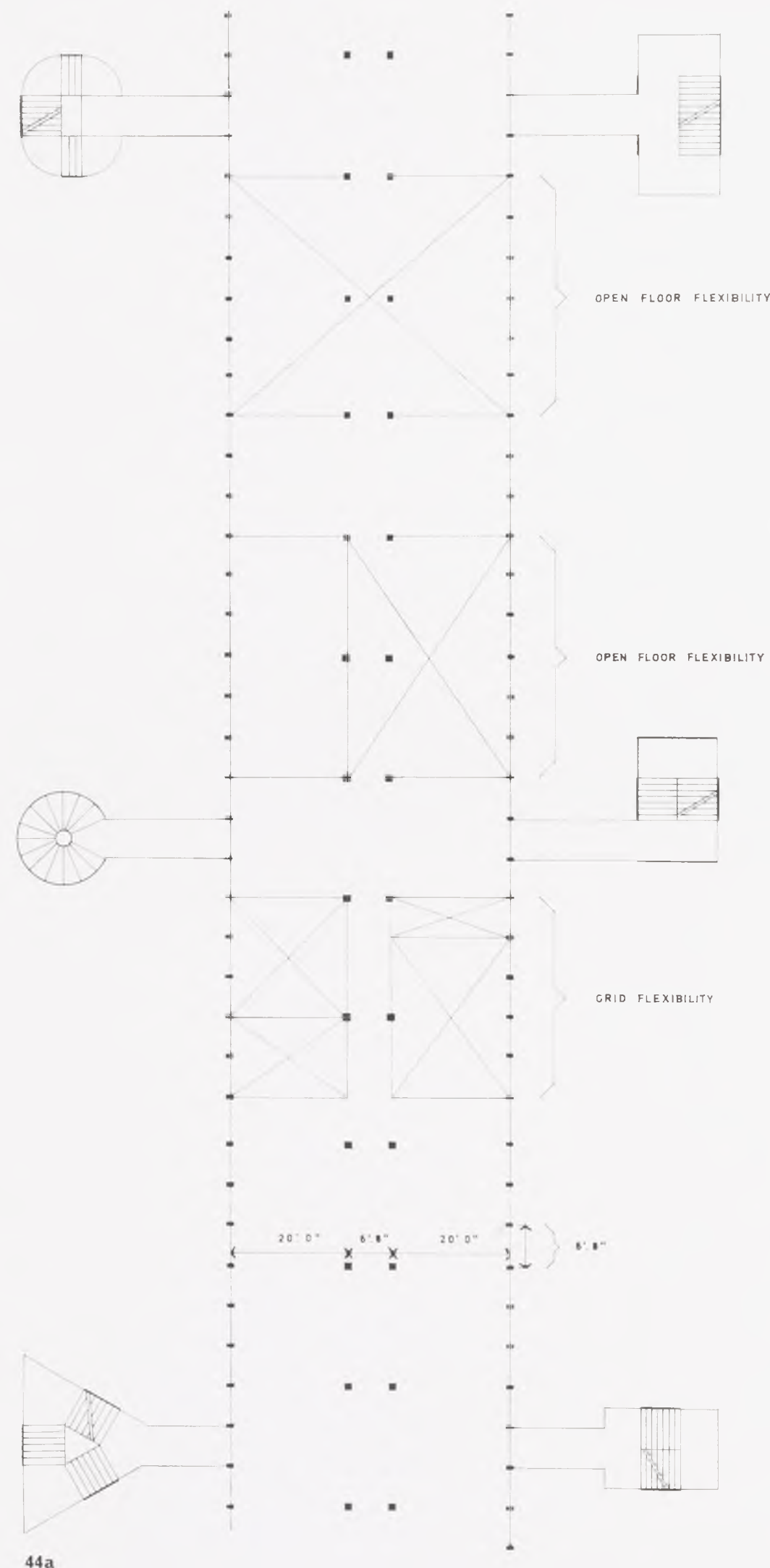
- 1 The siting of these 'permanent' and 'flexible' buildings relative to one another should be such that the permanent multi-storey buildings define a new core within the University precinct while the flexible single storey structures are allowed to spread out behind the 'façade' towards the perimeter of the site.
- 2 The inclusion of covered access ways at ground level under the multi-storey blocks would provide protected circulation routes throughout the precinct – an important consideration if, within the walls, the pedestrian is to be encouraged and the motorist discouraged.
- 3 Most of the multi-storey buildings will be specially designed to serve the permanent requirements of various departments. Where a number of relatively small departments are to be grouped in a single multi-storey building, even if their requirements have been carefully assessed, it would be prudent to design this building from a structural point of view so that internal partitions can be moved, thus making it possible for neighbouring departments to expand and contract through the years (a principle which is familiar in speculative office building). In order to allow for the changing size of small departments within a multi-storey building, it would be most convenient to keep the vertical circulation (i.e., the staircases and any lifts or hoists) outside the buildings thus leaving an unbroken floor area for sub-division into rooms. Advantage could be taken of this to design the form of the staircases, leading to different departments, varied in shape in order to lend an immediately recognisable identity to these small departments. It should be possible to design these staircases as light and elegant structures which could actually be moved to different positions relative to the block which they serve if the expansion of a department suggested a more convenient position for the point of access.

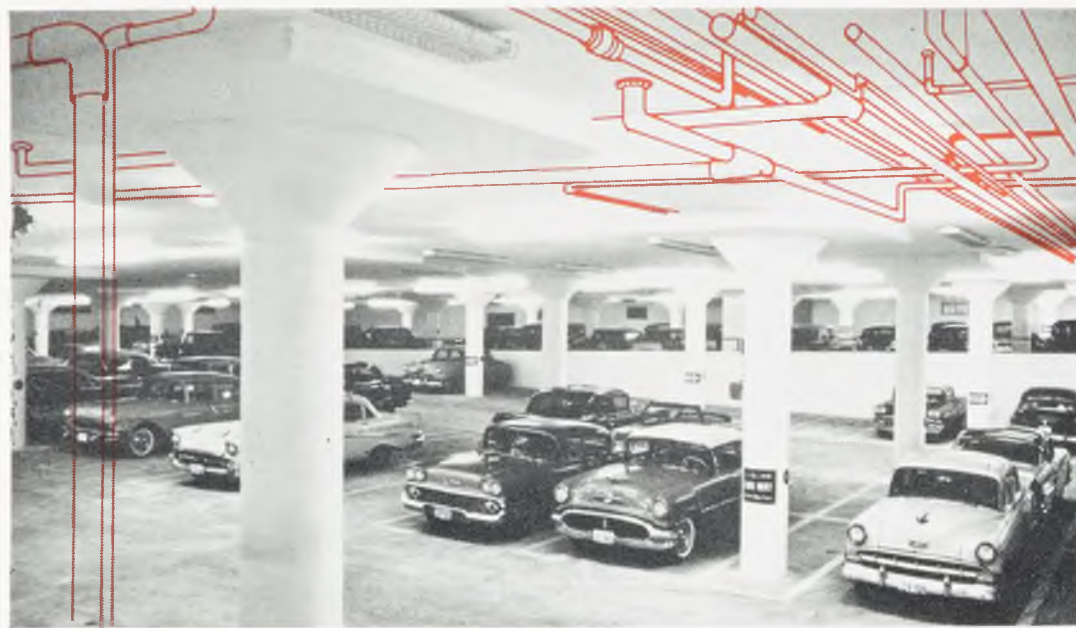
Multi-storeyed teaching blocks

44a Typical floor plan of multi-storey block, allowing flexibility in the arrangement of partitioning of space within and between departments.

44b Typical sections through multi-storeyed teaching blocks.

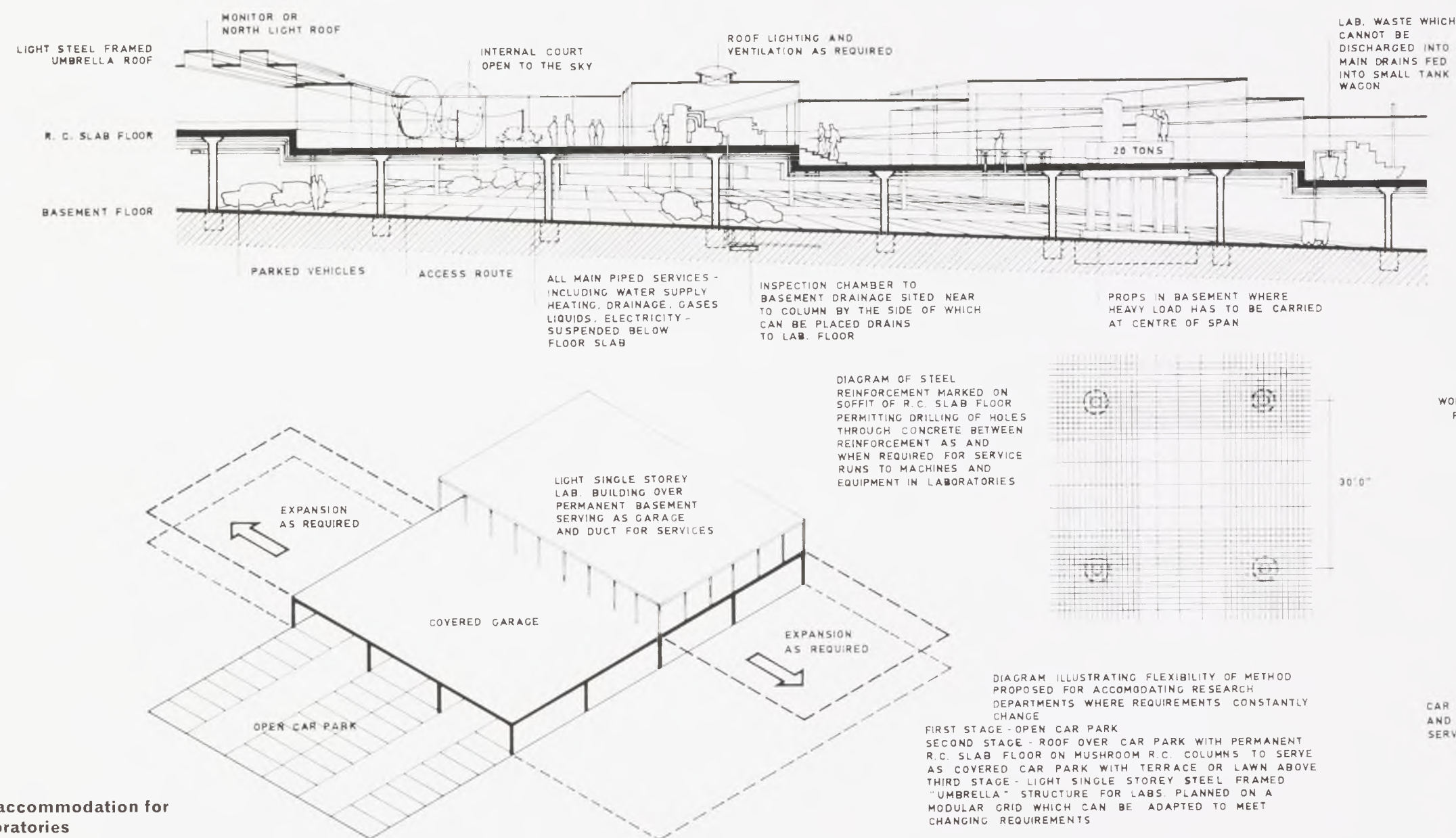
44c Perspective sketch indicating the easily identifiable forms of the staircases providing access to different departments.



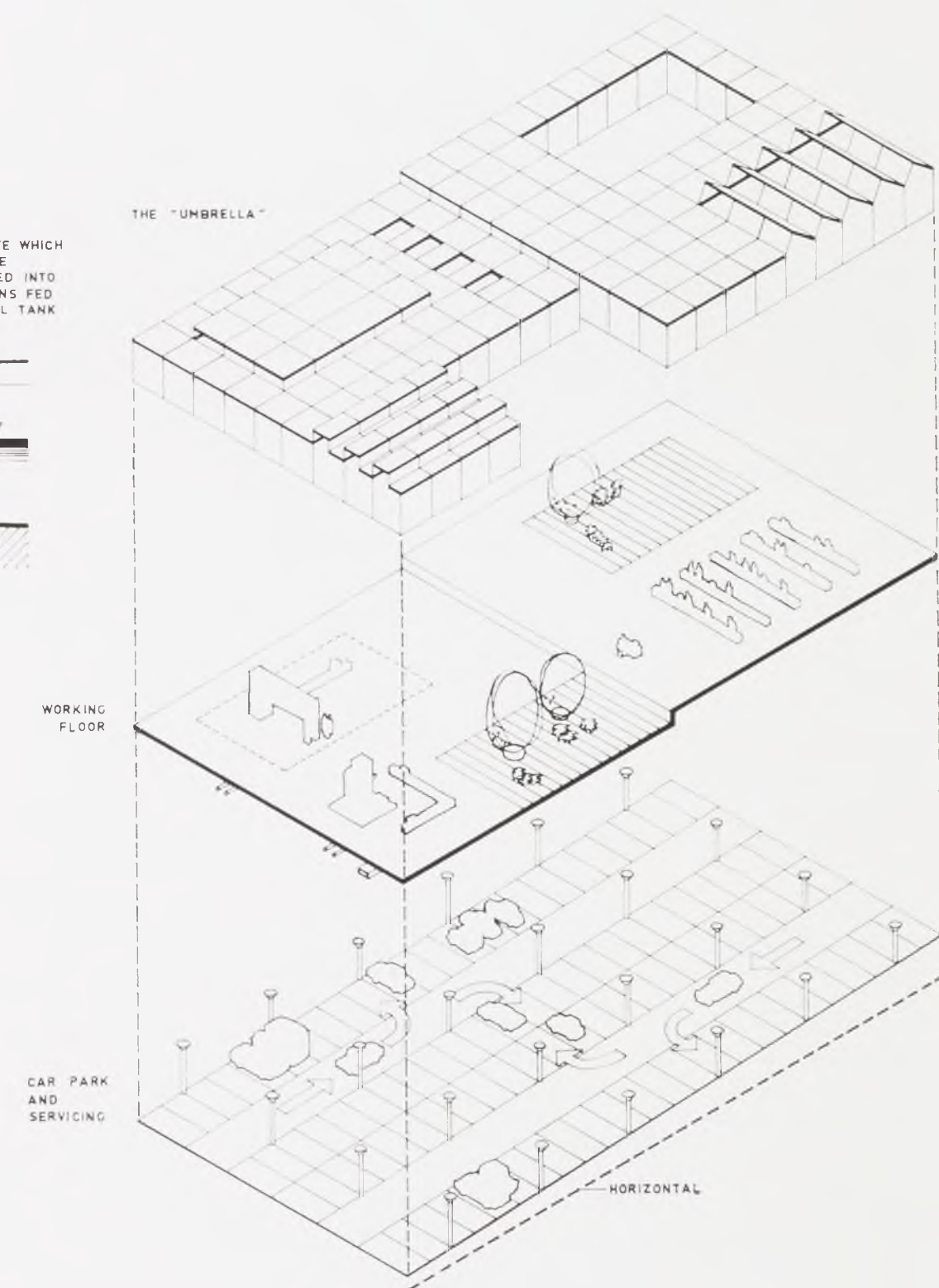


45a Cars parked in a garage

The superimposed diagram indicates how service pipes could be suspended freely from the ceiling leading directly to any required position on the floor of a laboratory built over the garage.



45b Flexible accommodation for research laboratories



The form of new buildings and of the space they occupy or define

- 1 The single storey structures (designed to provide flexible accommodation to meet the changing requirements of various departments) can be laid out to cover the ground densely or can be planned as a series of pavilions separated by patios and gardens, dependent upon the circumstances and requirements.
- 2 Certain departments have singular requirements which can be exploited in the design of the buildings to house them so that these will be expressive of their purpose and distinctive in their form, thus serving as foils to the regularity of other buildings. The Physical Education Centre with its large sports hall, the group of large lecture rooms associated with the Mathematics department, the Theatre and the Art Gallery, the Senior Common Room, the dining halls among the blocks of study-bed-rooms, are all examples of buildings falling into this category.
- 3 It is remarked elsewhere that most departments require small departmental libraries and reading rooms; also needed are informal waiting spaces where students may sit and talk between lecture periods. If these spaces can be provided near the entrance to the department, and if they are designed in distinctive and unstandardised forms, both a useful purpose will be served and a sense of identity will be created which – particularly in the case of small departments – is important.
- 4 It is essential to create a coherent pattern out of the diverse building elements which constitute the University. As it will take a decade to complete the development envisaged in this report, requirements now



46a An inner court
within a low building.

anticipated may change sufficiently to vitiate any finite overall plan which might be proposed now. Nevertheless, it is clearly desirable to cultivate an image of the University precinct when completed, particularly the way this will appear to members of the University during their daily movement between departments. We visualise the University in the future as a sequence of inter-related courts flanked by buildings serving the various departments. Within the new development between the old Infirmary and the new Arts wing of the Parkinson building these courts, rising up the sloping ground in the form of stepped terraces, would be linked by ramps and stairs joining the covered circulation routes behind colonnades under the buildings. Each court would have a purpose and character of its own expressed by the nature and form of the buildings surrounding or within it.

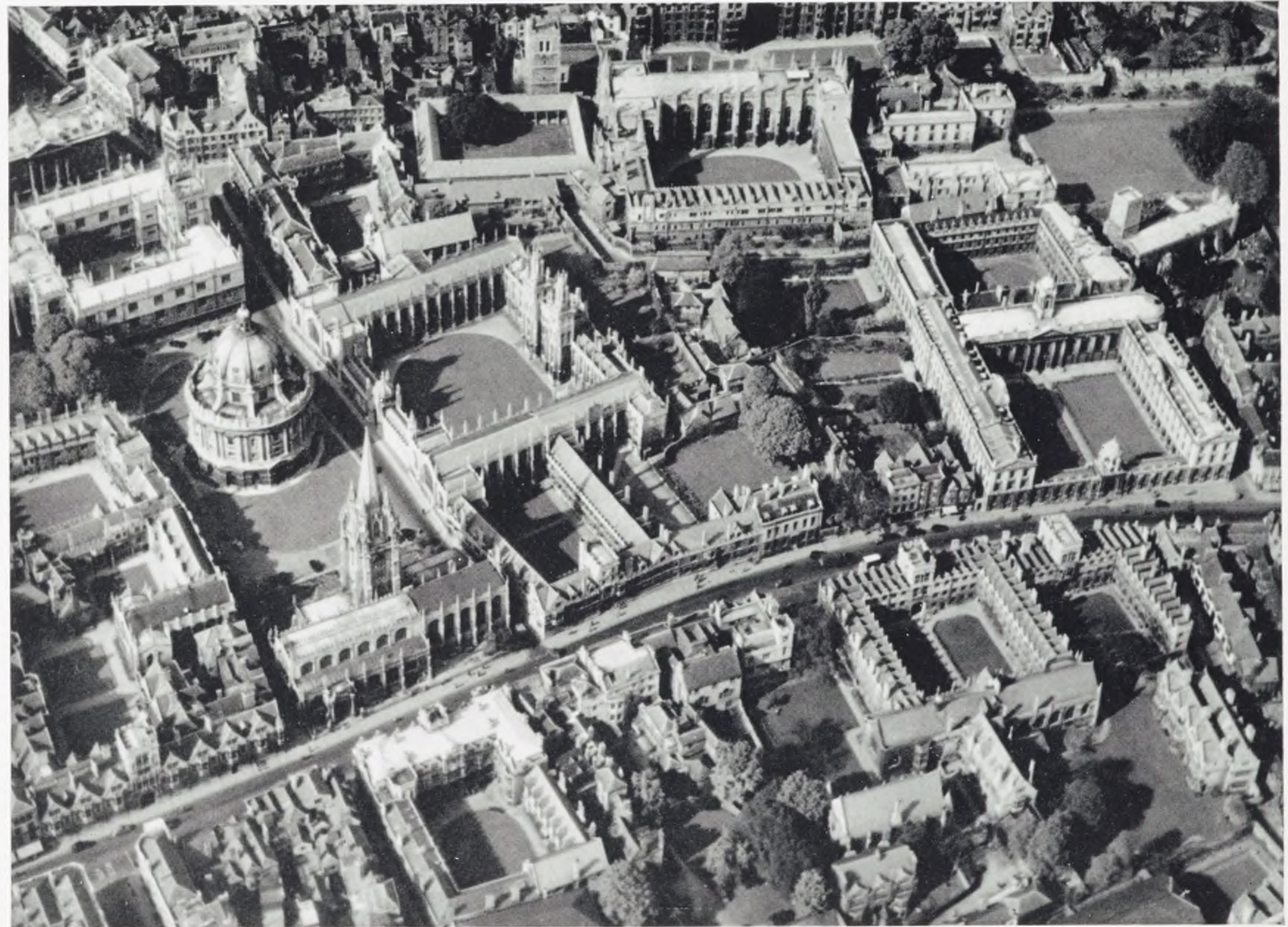
- 5 Interspersed with this system of courts gardens would be laid out ranging from small patios to the University garden extending over the site of the old graveyard at the highest point in the precinct.
- 6 The actual grouping of new departments round the courts should, where possible, ensure that adjacent buildings accommodate neighbours sympathetic to one another. For example, there is some common ground between the Institute of Education, the Department of Education, Adult Education, the Art Gallery, the Music department and the University theatre. The Physics and Mathematics departments also have a close affinity. Similarly, the Medical School, the Dental School and the Hospitals all have in common the study and preservation of physical health.



46b Internal patio
illustrating decorative planting in a patio surrounded
by single storey, prefabricated buildings.

47a Aerial view of Oxford

illustrating the organic development of a series of courts – a unique combination of open space, architecture, paving, trees and grass. To move through this sequence of spaces is an experience without equal.



A block of lecture rooms; the art and technique of communication

Mathematics lecture block

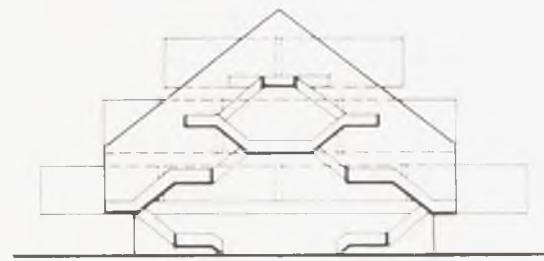
- 1 The Mathematics department which, in addition to teaching its own 'special studies' students, provides so much service teaching to students attending from other departments, urgently needs new accommodation. Because of the importance of the department in the University, it deserves a distinctive and easily identifiable building.
- 2 The forecast schedule of accommodation for the Mathematics department suggests that most of the rooms needed for teaching are straightforward except for the large number of sizeable lecture rooms required. As the department gives so many lectures to so many students we felt that a building expressive of this activity would provide, in an appropriate way, a distinctive form of structure.
- 3 Although Mathematics lectures are usually given in rooms with flat floors so that tables may be used for writing on and so that the rooms can be made use of for examinations, we think that further thought should be given to the possible advantages of these large rooms (1,200 sq. ft. each) being built with raked floors. Firstly, as is referred to elsewhere, these lecture rooms will not be used exclusively by the Mathematics department and the convenience of other users is, therefore, a point to be considered. Secondly, for lecture rooms of this size, stepped seating is usually much to be preferred as it makes it easier for students behind the front seats to see blackboards, slide projections, etc. Thirdly, many lecturers find that it is easier to establish contact with, and retain the attention of, students if they appear to be close; a 'raking' audience which appears almost to be reaching forward is much more intimately related to a lecturer than a large 'flat' audience which has the appearance of stretching away from him. Fourthly, even with banked seating, generous working tops can be provided in front of each row of seats, if required. Fifthly, as pointed out elsewhere, we do not think that the ideal form of a room for a particular purpose – in this case lecturing – should be inhibited by the need to provide for an occasional demand – i.e., the holding of examinations. For all these reasons, therefore, it is suggested that the large lecture rooms should be designed with banked seating. Sixteen lecture rooms, each 1,200 square feet in size, are required by the Mathematics department; in order to produce a symmetrical building, we have increased this number to eighteen in the preliminary design on the assumption that the two additional lecture rooms could be allocated for the specific use of adjacent departments such as Geology or Physics. As referred to elsewhere, although this large number of lecture rooms will be required by the Mathematics department it is proposed that they should also be generally available to other near-by departments in order to ensure that they are as fully used as possible.

- 4 If all these lecture rooms are ever in concurrent use, and if all are occupied by full audiences, as many as one thousand students might be in the building at one time. The movement of such a large number of students to and fro between lecture periods could result in serious congestion; for this reason generous circulation space needs to be provided.
- 5 The form of the building derives from the massing of these raking lecture rooms upon one another on either side of central lobbies and staircases. To provide a sheltered concourse for the gathering together of the many students who will frequent the building, the lowest lecture rooms (eight in all) occurs at first floor level supported clear of the ground on structural columns. At second floor level there are six lecture rooms and on the third floor are four more. The lobbies and stairs widen out at the lower level to provide for the greater volume of traffic. The building as a whole is designed to stand on part of the terraced level of the court to the east of the Senior Common Room which, in the south-east corner, projects in the form of a promontory over the lower court, in this position, the block of Mathematics lecture rooms partially closes the west end of this court and is poised over the campus below in which the Physical Education building is sited. Descending beneath the lobbies of the lecture room, block stairs would lead down to the lower level terrace, giving access on the way to the smaller, flat-floored lecture rooms required by the Mathematics department and planned within the promontory referred to (49a-d).
- 6 The problem of designing a central block of lecture rooms to serve not only the Mathematics department but also several of the other departments sited in the new development, raises a number of other problems which go far beyond the mere provision of buildings and which, because of their importance, deserve some comment.

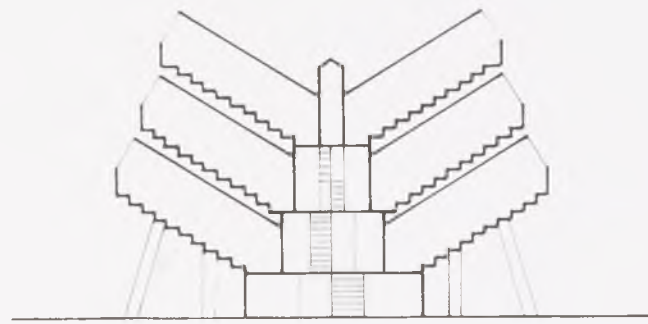
The art and technique of communication

- 7 The effectiveness of reading and learning depends, to a great extent, on the ease with which the informed is able to convey what he knows to the uninformed. The classic methods of communication include the teacher and his student, or group of students, the lecturer and his audience, and the writer and his readers. During the past century university education has been made available to far more people and the problem of a limited number of teachers communicating with an ever growing number of students has become more acute. Lectures and demonstrations have had to be arranged for large audiences, the blackboard and bench have been supplemented with more elaborate technical aids ranging from the 'magic lantern' to the epidiascope, film-strip and cine-projector. As student numbers grow it is not uncommon for a lecturer to give the same address to different groups of students (so large are the numbers or so complex is the university timetable). Sometimes it is necessary for more than one member of staff to be engaged in lecturing on exactly the same subject. This is partly because, beyond a certain distance away from the rostrum, students cannot see practical demonstrations on the bench, and partly because few lecturers can hold the attention of very large audiences. Whereas there are, at any one time, few good minds and few good lecturers there are fewer still who both possess wisdom and have the gift of being able to express it.
- 8 Since books are the receptacles within which knowledge and experience are distilled some hold the view that a book absorbed is worth many lectures attended; it is nevertheless true that in most universities lectures are still regarded as the backbone of formal teaching. The problem of how to ease the burden of lecturing to more and more students is formidable, therefore, and suggests that attention should be given to any technical methods available which might supplement the essential – and comparatively rare – art of lecturing.
- 9 Closed circuit television, whereby a lecture or demonstration given in one room is relayed and reproduced on a screen in one or more other rooms, is a fairly familiar technique today yet it is not widely used in university education in this country. It is, nonetheless, an almost ideal medium for enabling larger numbers of students to 'attend' the same lecture. As a technique, it is being increasingly used in America where they have for long been faced with the problem which we are now encountering in England, of how to reach large audiences with only a limited number of good lecturers.
- 10 Closed circuit television can make lectures, discourses, demonstrations etc., available in all lecture or seminar rooms which are equipped with T.V. receivers. Although they are not sent out on the air, such performances may be preserved by adding to the closed circuit equipment a Kinescope recorder and processor. In this way a library of the

49a



49b



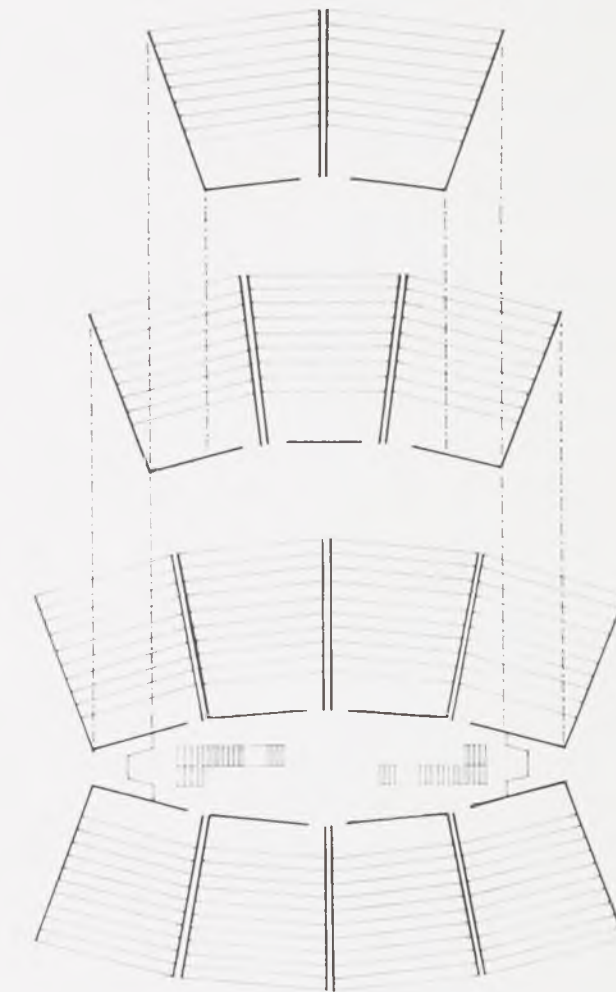
best recorded lectures can be collected, indexed and housed for use when required or for exchange with other universities. An extension of this technique to make a particular professor's lecture available to as wide an audience as possible would be to link universities with land-lines so that, by means of closed circuit television, the considered views of the country's specialists could be made available simultaneously to as many students as possible; nor is this without importance because research in many subjects overtakes generally accepted knowledge so quickly today that, by the time many technical books are published, the knowledge they contain may be obsolete as is indicated by the increasing importance attached to articles printed in periodicals.

- 1 The problems of communication are not confined within the boundaries of the University. The Institute of Education and the Department of Adult Education and Extra-Mural Studies in Leeds may be regarded as the link between the University and the surrounding region. For several decades now English universities have, in addition to their primary function as institutions existing for the pursuit of knowledge attended by students devoted to this purpose, spared no effort to disseminate both knowledge and cultural influence outside their walls. Usually the methods used have consisted of evening courses of lectures, week-end courses, summer schools and conferences, etc. For the most part instruction has been given by hard-working teachers and experts to small groups of people whose thirst for wider horizons has led them to come together, often at the end of a day's or a week's work or during their vacation, in fine weather or foul, and in the face of seductive diversions in the form of social activities, entertainment in theatres, concert, cinema or, today, television. This last is, perhaps, the most demoralising distraction of all since it has invaded the home and thus has made it possible for people to be entertained – or even to be mildly educated, for a number of programmes broadcast are intelligent – cheaply and without having to go out of doors. For several reasons we have been led to wonder whether it would not be most beneficial to try to exploit

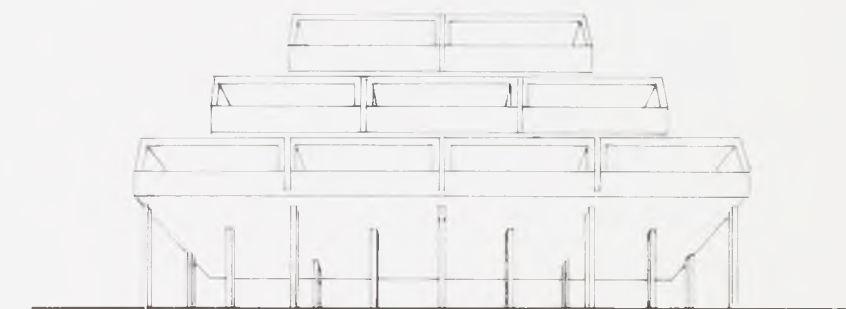
the potentialities of this medium rather than to resist it and, in so doing to spread the activities and influence of the extra-mural departments of the University far wider than has ever hitherto been possible. Bearing in mind that much thought is being given at this moment to the establishment of a third national television network, and that the great extension of university education which is now taking place must in part reflect the view that our future may well depend upon the cultivation of a higher level of intelligence spread more widely throughout the population, there would seem to be good arguments in favour of giving authority – and the necessary resources – to the English universities in order that they might establish and run a third television network rather than to either of the two existing claimants, the British Broadcasting Corporation or the Independent Television Authority.

- 2 In the first place a Universities Television Corporation – being dedicated to education and the dissemination of knowledge, speculation and the arts – would have no obligation to entertain or to pander to some theoretical lowest common multiple of viewers; yet it is unthinkable, with such unexceptionable terms of reference and such a wealth of talent, that they could in fact fail to entertain while also educating.
- 3 In the second place – regarding the quality of thinking which a Universities Television Corporation could encourage in its audience since it would have available the resources of the best academic minds in the country and would be unconfined for time in the daily programmes by competition from the commercially or statistically popular programmes which are usually allotted the most favourable viewing times – it should be possible to embark on a series of courses directed at different levels of intelligence which would have more depth than the 'digest' programmes that are occasionally attempted by the existing network. In the third place, the universities have an interest in the type and level of particular and general knowledge acquired by entrants to the universities. At present, influence regarding the knowledge a freshman will

49c



49d



100 50 0 100
SCALE IN FEET

Mathematics lecture theatre block

49a Longitudinal section through central lobby and stairs.

49b Cross section through stepped lecture rooms.

49c First, second and third floor plans.

49d Elevation.

have is exercised through the university examination boards which, in effect, prescribe what is learnt at school. There would be many advantages for the universities if they were able to extend their influence beyond the dry requirements of an examination syllabus by being able to make contact with secondary school children, through the medium of television, at times of the day when other networks feel obliged to address adult audiences.

- 1 In the fourth place, at a time when large sums of public money are being diverted to support higher education, there is some appeal about the idea of this being, to some extent, a two-way transaction. If wealth is to be invested in more and better education – as it should be – many would like to feel that, reciprocally, education outside the schoolroom was to be made as widely available as possible to the public who would indirectly be financing it.
- 2 Holding that there would be so much to be said in favour of establishing a third television network run by a Universities Television Corporation, we have made some enquiries about any precedents. In America (where technical developments are so spectacular yet, in terms of time, only a little ahead of this country) the Federal Communications Commission, after extensive hearings, set aside as long ago as 1952 242 channels for the exclusive use of non-commercial educational broadcasting. Iowa State College, in 1951, was the first to broadcast television programmes, and by 1957 more than one hundred universities in the United States were putting television programmes on the air – five stations for as much as six hours on each of five to seven days a week. The state of Wisconsin chose to start its television activity – designed to utilise twelve channels eventually – with a closed circuit station at the university in Madison. Quoting from a report:

‘As a laboratory for teaching and research, it contains three camera chains, cable to link the studio and the viewing rooms, lighting and scenery, monitors, a mobile unit, photographic equipment, a kinescope recorder, and a processor. Here is the adequate beginning with essential equipment for training students, developing television courses on undergraduate and graduate levels, and giving the staff an opportunity to experiment in programming and production techniques before being actually faced with a complicated broadcasting-station schedule.’
- 3 All the considerations referred to above lead us to the view that careful attention should be given to the pros and cons of establishing a television network run by the country's universities and that, if such a scheme seems promising, it should be proposed in the appropriate quarters; if accepted, it would appear that the University of Leeds might well initiate a pilot series of programmes. We advise, in any case, that a closed circuit system should be introduced within the University in order to provide as much technical help as possible to alleviate the problem of giving lectures to large numbers of students at a time when

the demand for lecturers may well outstrip supply. Lastly, we suggest that consideration should be given to the possibility of establishing a department in the University concerned with the theory, art and technique of television broadcasting (or a Department of Communications). So far as we know, such a department does not yet exist in any English university although a department of Drama does, of course, exist at Bristol University, to which a television department at Leeds might be a quite natural counterpart in the mid-twentieth century. A particular advantage that would ensue from creating such a department at the earliest possible moment would be that the University of Leeds could establish the organisation necessary to acquire knowledge and skill in this new medium of communication so that it could be expanded quickly to meet the opportunity which, we hope, might be offered to Leeds if the Universities were called upon to run a third television network.

The new Medical School and the Infirmary

- 4 Considerable attention has been given to the study of the requirements of the new Medical School; these are not only complicated in themselves but also in their relationship to certain departments within the Infirmary.
- 5 Because the building of a new School of Medicine will involve the expenditure of a large sum of money, we have tried to visualise an ideal framework for the study of medicine in Leeds.
- 6 Close integration between the hospital wards and the clinical departments of the Medical School is desirable since, in a sense, the wards are the laboratories of medical teaching. It is virtually impossible to graft a new Medical School on to the existing old Infirmary buildings in any way which could be described as efficient. Although no new teaching hospitals have been built in England since the war, several are planned including St. Thomas's, Charing Cross, and one at Cardiff. We have had an opportunity to study the plans of St. Thomas's which are designed so that the floors of the ward blocks are interspersed with floors containing laboratories and teaching accommodation. This is, of course, only one of several methods of planning which may be employed to achieve a close and useful integration between the teaching and medical services. We have also visited the Zurich Cantonal Hospital, one of the few teaching hospitals in Europe completed since the war, and regarded by many as a model of its kind. All our research and investigations have led us to the conclusion that the right course to follow – and certainly the best long-term investment – would be to build a new teaching hospital which should be designed concurrently with the new Medical School (52a–d, 53a–e).
- 7 The suggestion that the Infirmary should be replaced by a new hospital is not a new proposal. Some twenty-five years ago the building of a new Infirmary in more salubrious surroundings outside Leeds was carefully considered and, we believe, only finally turned down because of the inconvenience which would be caused to out-patients who would have to travel long distances. Nevertheless, a proposal to spend yet more money in building a new hospital in addition to a new Medical School needs more justification than merely the convenience of the latter.
- 8 Comparison with the rate of hospital building in other European countries can leave one in no doubt as to how obsolete most of this form of building is in England. Hospital buildings and facilities have not kept pace with rising standards of living; facilities for the preparation and serving of meals, the state of bathrooms and lavatories, conditions of privacy for patients, all leave much to be desired. Although it is held that the avoidance of sepsis is directly related to the provision of air-conditioning, few – if any – hospitals in England are provided with this equipment. The cost of the Health Service is inevitably related to the

uneconomic use of outworn buildings; in the report of the Guillebaud Committee it was stated 'unless capital expenditure bears a relation to current expenditure then the Service must become more costly and less efficient'. Higher wages necessitate the efficient use of hospital staff, so that the convenient siting of wards and departments is important. It has been authoritatively stated that 'it is not so much more beds or pairs of hands that are required but up-to-date buildings constructed for present day medicine and not for medicine of 100 years ago'. In this connection the following shortcomings are characteristic of many English hospitals – and may well apply equally to Leeds Infirmary: inadequate amenities for patients by present day standards, working time lost because of inadequate buildings in the out-patients departments as well as in wards (leading to long waiting lists), increased cost of maintaining, obsolete buildings and the wasteful use of limited staff because of overcrowded and badly sited conditions.

- 1 It was stated at a recent conference on Hospital Planning that 'any new hospital must lend itself to adaptation and extension and must allow flexibility in future planning. We should build for the future even though in medicine the future can never be fully foreseen'. The inflexibility of the old Infirmary buildings at Leeds needs no emphasis; adaptability can only be created in entirely new buildings.
- 2 So much attention has been given in our society to curing the body after it has become ill that the practice of preventive medicine is little more than an idea. Professor Durward has stressed, in conversation, his concern about medical students being so immersed in specialised studies during their years of clinical training that they are often ill-equipped to deal with the day to day problems which face general practitioners. This view was supported by a doctor speaking at a recent conference who expressed the view that one of the several functions of a hospital was to act as a local medical centre. He went on to say 'one of the drawbacks of the National Health Service has been more and more to divorce the family doctor and the hospital from each other. These contacts have been few and are decreasing. There is a need for the hospital to take a lead to re-establish closer links'. He elaborated on the advantages of bringing together general practitioners, public health officials, and the hospitals in a single 'local health area'. There would seem to be the opportunity to create an environment in Leeds which would encourage a much more positive attitude towards health in which the very necessary medical research could proceed side by side with simple preventive medicine. If a system were to be devised whereby the University medical students could have useful contact not only with the Infirmary – which they must have – but also with general practice in the surrounding neighbourhood, this could hardly fail to be beneficial to them and would also form yet another link between 'town and gown' which should be advantageous to both.

- 3 It has been suggested that any new buildings which the Infirmary may require can be erected in multi-storey blocks, on the present site of the Infirmary. We do not think that this suggestion would be practicable, convenient, or economic. In the first place the need to retain in use large parts of the Infirmary would inevitably dictate the form and position of any new buildings, and it is highly improbable that under these circumstances such piecemeal replacement could be designed to be as efficient as it should be. Moreover the disturbance caused to both patients and nursing staff in wards adjacent to the new building work could well prove intolerable. For these reasons, in addition to the ones outlined above, we consider that a new hospital building should be sited between Clarendon Road and the University precinct. It should not, however, be assumed that the recent additions to the old Infirmary would be wasted if it was decided to build a new hospital. The latter would take long to plan and longer to build, during which time the post-war additions to the Infirmary would continue to serve the purpose for which they were built. Even by the time a new hospital could be completed, these late additions to the Infirmary if no longer needed for medical purposes might continue to justify their existence by being made use of for some other function.
- 4 As this proposal is controversial – and, therefore, perhaps, not acceptable – we propose that those parts of the Medical School buildings which do not need to be associated with the Hospital should be sited between the existing Infirmary and the site proposed for the new Hospital. In this position the Medical School will still be conveniently placed for access to the Infirmary should it ultimately be decided to retain this where it is. In this event, however, it is all the more important to cover over the new Ring Road in order to ensure easy connections between the University and the hospital. Even if the proposal to build a new Hospital on a new site is accepted, it will still be necessary for the Medical School to work in conjunction with the existing Infirmary which must continue to function until all departments have moved into the new buildings.
- 5 It is vitally important to reach agreement in principle about whether or not a new Teaching Hospital should be built before any planning of the new Medical School is started, since this will be fundamentally influenced by whether the new teaching departments are to be oriented towards the old Infirmary or towards new ward units and out-patient departments. If the new Hospital, Medical School and the School of Dentistry are to be closely and sympathetically integrated with one another very complex planning problems will need to be solved to ensure that the resulting group of buildings will serve its many purposes smoothly as well as being flexible enough to accommodate changing needs. It would be advisable to embark on a detailed study of all the many factors involved – which are likely to take a long time to resolve –

and to obtain the best advice available on the planning of contemporary medical buildings which has been the subject of so much useful research during the past decade. Careful and comprehensive analysis of all the requirements in the early stages of planning is certain to justify the effort involved in the ultimate practicality and general usefulness of the buildings when complete.

- 6 In the preliminary layout plan we have applied the principle, put forward earlier, of planning the unchanging accommodation in multi-storey buildings, and of planning departments which need flexible accommodation to cater for growth and change in single storey buildings above basements which serve as garages and ducts. The pre-clinical teaching rooms of the Medical School, and the ward units with adjacent teaching room in the hospital, are proposed in buildings ranging in height from four to ten storeys; research departments, operating theatres, out-patient departments, etc., are indicated in low terraced buildings interspersed with patios.
- 7 As there appears to be the opportunity to create a new Medical Centre in Leeds of a sort which could be uniquely valuable, it may not be inappropriate to quote the intention which inspired the United Cardiff Hospitals Board and the Welsh National School of Medicine to sponsor a new Medical Teaching Centre for Wales:

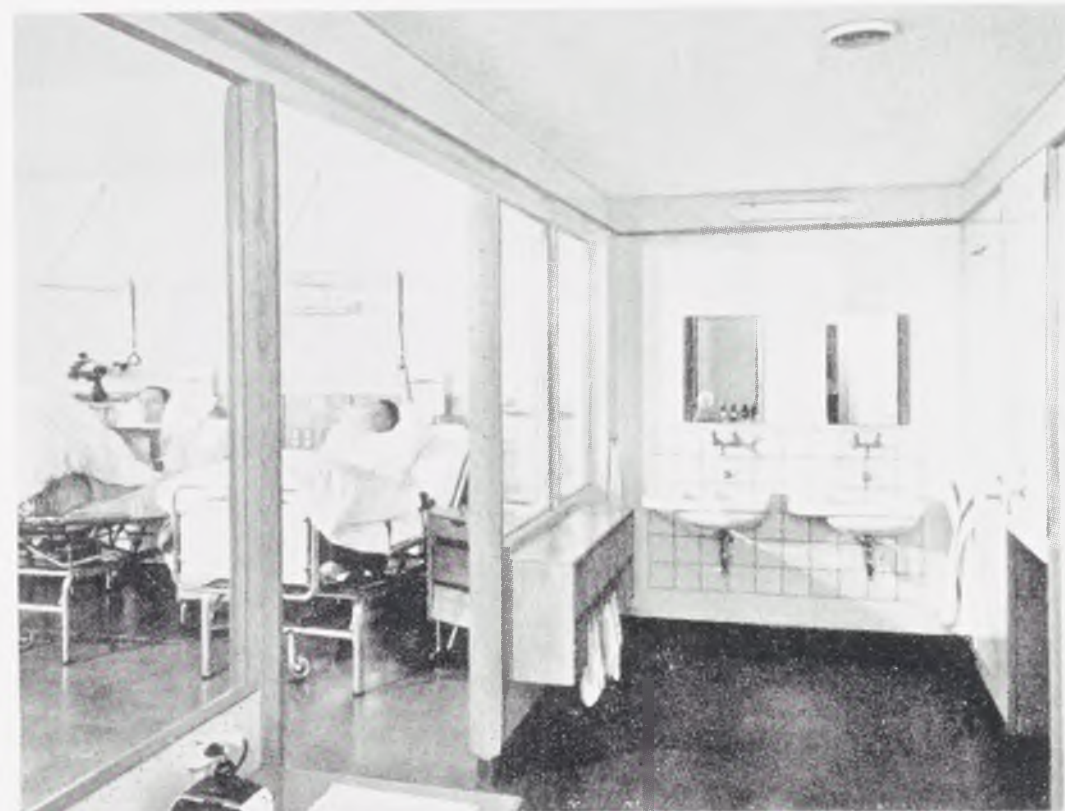
'The building of a complete Medical and Dental School with a Teaching Hospital designed as a whole, will be without precedent in the history of medicine in this country. It presents, therefore, a challenge and opportunity. The promoters intend that this centre will attract all who are concerned with the health of the people, so that its influence will be felt far beyond its own area.

The advancement of knowledge in medicine in such a centre will be the result of study combined with the care of the sick, created by a harmonious integration of the two institutions for which accommodation will be provided – the School and the Hospital.'



52a

52



52b



52c

**Photographs of the Cantonal/University Hospital in Zürich
built between 1942 and 1953**

52a Low window-sills make it possible for patients lying in bed in multi-storey ward blocks to feel contact with nature.

52b Partly glazed lobby to eight-bed ward containing basins, cupboards, nurses' desk.

52c Day-corner in an eight-bed ward.

52d Nurses' dining room.

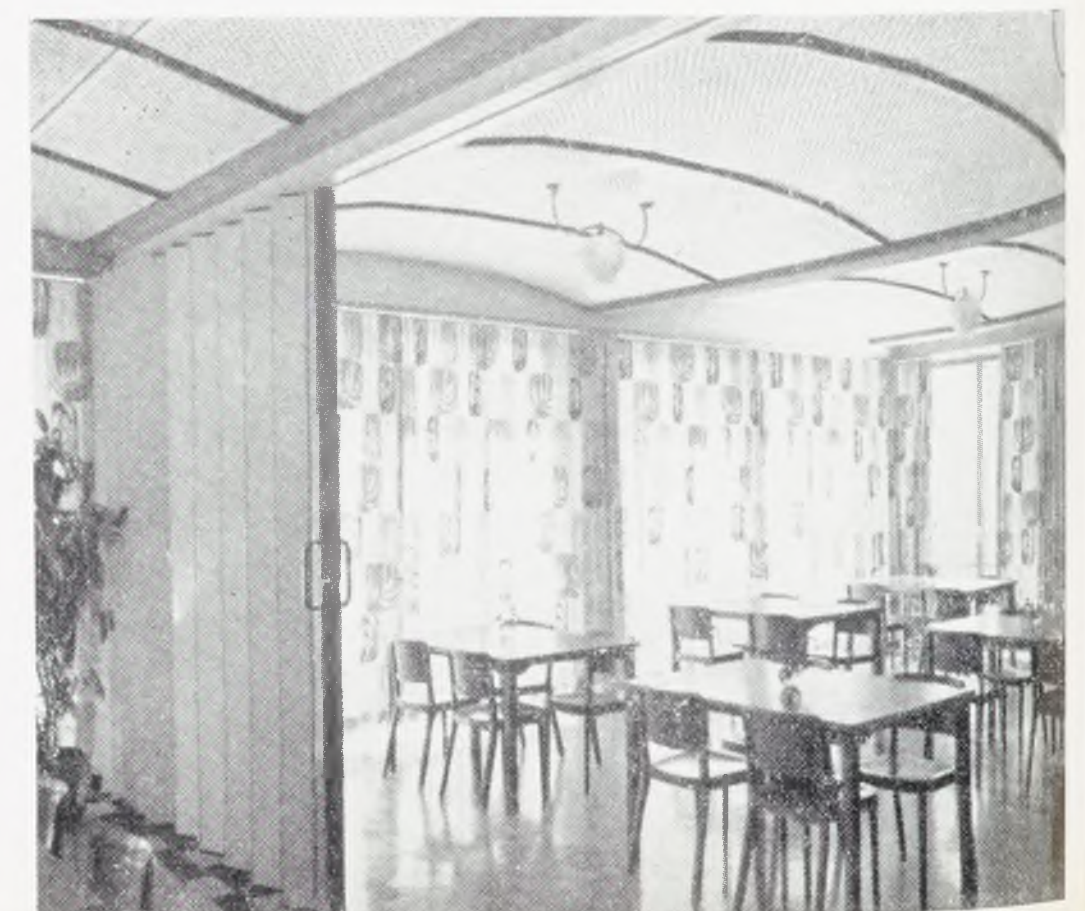
53a Typical two-bed ward.

53b Top-lit treatment room with open alcoves.

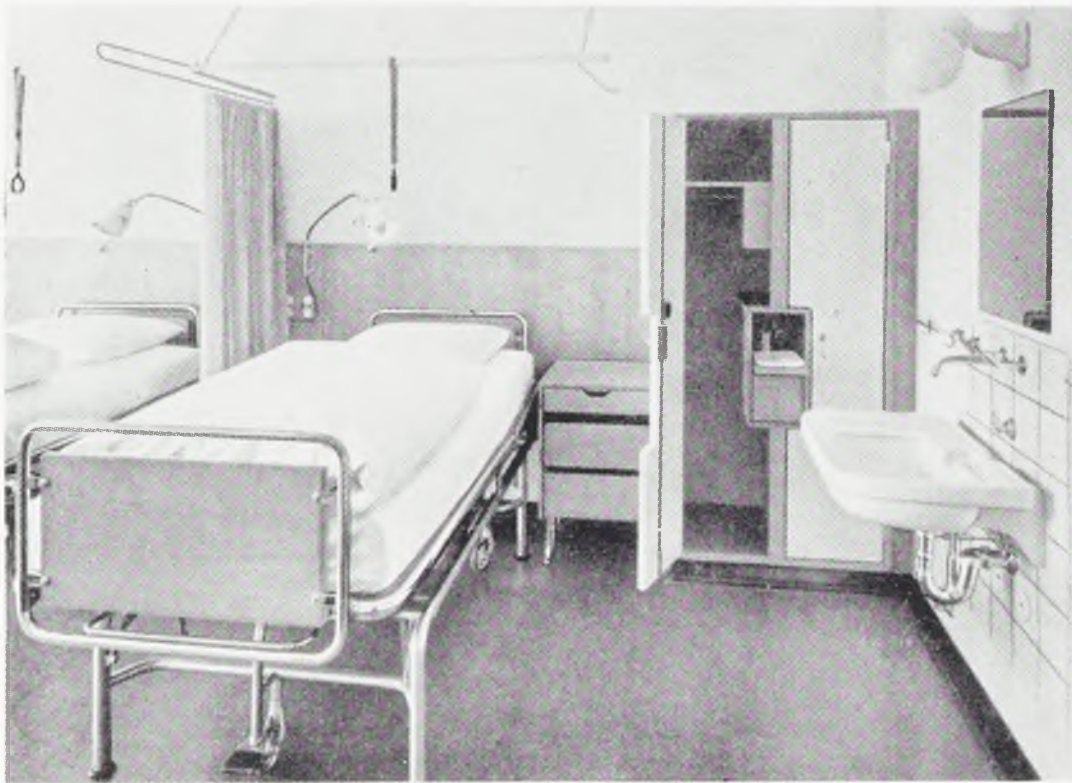
53c Operating theatre; double glazed windows and adjustable blinds.

53d Exterior of kitchen and service court.

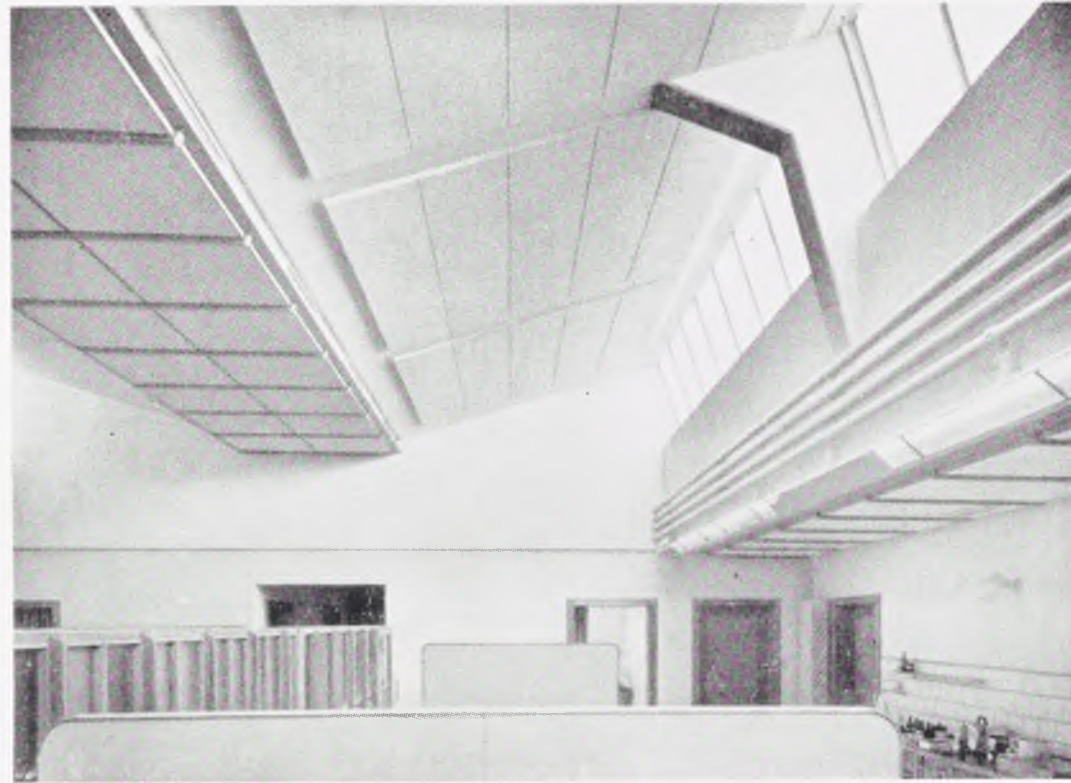
53e Central kitchen, top-lit, serving capacity 3,000 people.



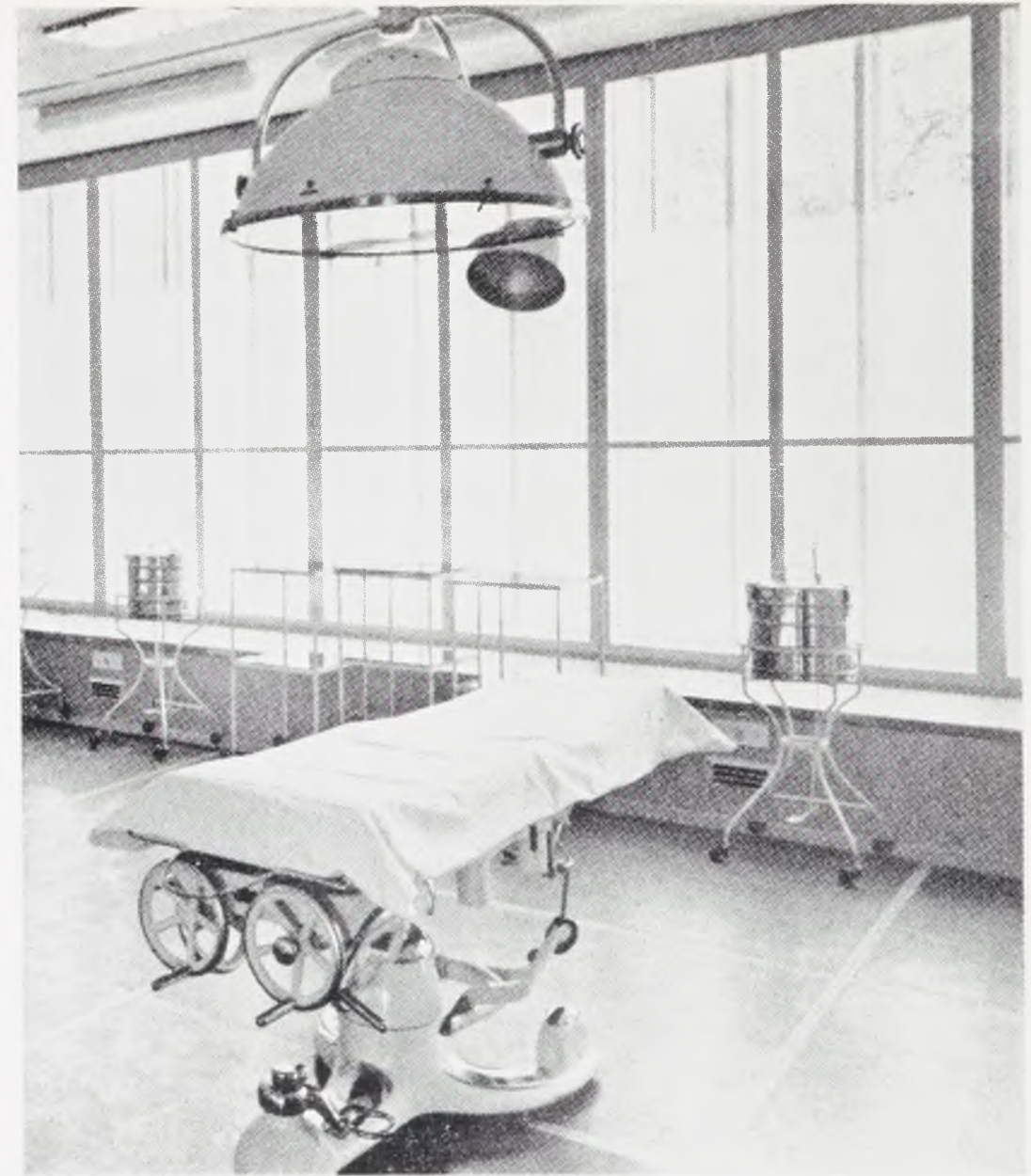
52d



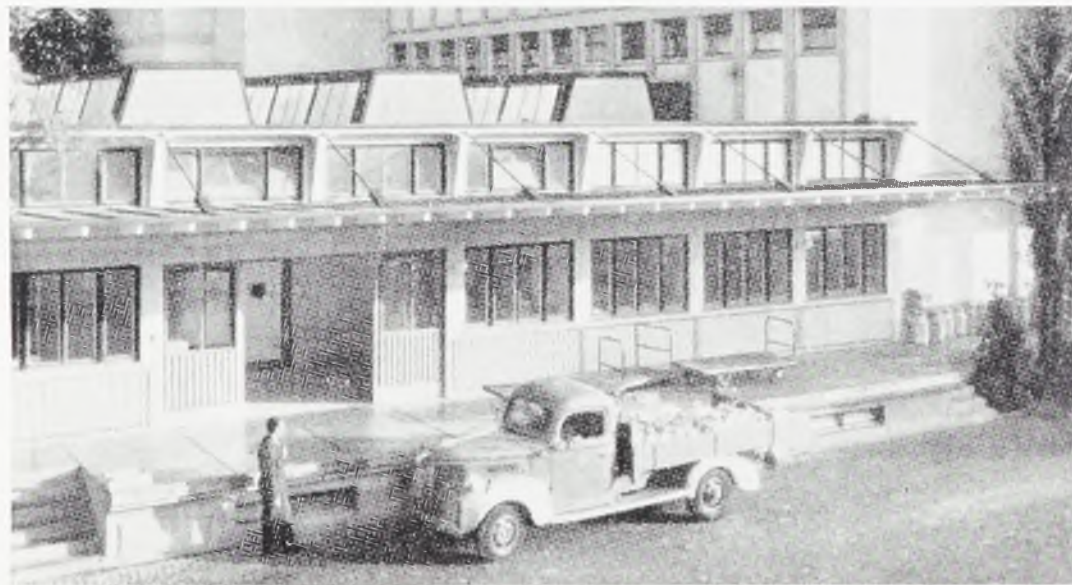
53a



53b



53c



53d



53e

A Physical Education Centre

- 1 The most prominent requirement of the new Physical Education Centre is for a large sports hall containing a flat floor on which a variety of games can be played, surrounded by a running track banked at the corners, and flanked on its two long sides by spectator seating. In the preliminary design for this building, the high wide span roof over this hall is extended to cover the gymnasium on one side and the swimming pools on the other side – both of which are recessed into the ground. The curved ends of the running track are expressed externally in the semi-conical forms of the enclosing walls. The extensive changing rooms and many of the smaller areas, which are listed in the Forecast Schedule, are planned under the Physical Education Campus on the level of the adjacent court, the Experimental Gymnasium being sited immediately under the large sports hall. Staff and lecture rooms, the small library and caretaker's flat (part of item 2 in the schedule) are all included in a three-storey block projecting from the west side of the sports hall (54a-c).
- 2 The site proposed for the new Physical Education Centre is at the south-east corner of the precinct between the new Medical School and the buildings housing the departments of Leather, Colour Chemistry and part of Physics. The reason for this siting is twofold. Firstly, the need for a swimming bath was particularly stressed by the members of the Medical School. Although it is no doubt desirable to have a swimming bath available for medical students it seemed unlikely that this could be justified for their use alone; the inclusion of this element in the new Physical Education Centre where it would be available to students of all faculties, and the siting of the Centre near to the proposed new Medical School, seemed to be an appropriate compromise.
- 3 The second reason for the siting of this building arose from the required provision of some spectator accommodation. For inter-faculty or inter-university events catering facilities could be provided in the nearby dining hall (No. 34 on the layout plan). Although the spectator accommodation is primarily intended for students of the University, it seems probable that, on some occasions, members of the public will be invited to attend. In order to encourage this opportunity for contact between 'town and gown' it seemed appropriate to site the new Physical Education Centre near the proposed new termination of Calverley Street where car parking facilities are planned and where it is also most easily accessible from the centre of Leeds.

- Key
- 1 Sports Hall and Running Track
 - 2 Circuit Training
 - 3 Athletics Pits and Nets
 - 4 Deep Swimming Pool
 - 5 Shallow Swimming Pool
 - 6 Experimental Gymnasium
 - 7 Changing rooms
 - 8 Teaching and service block

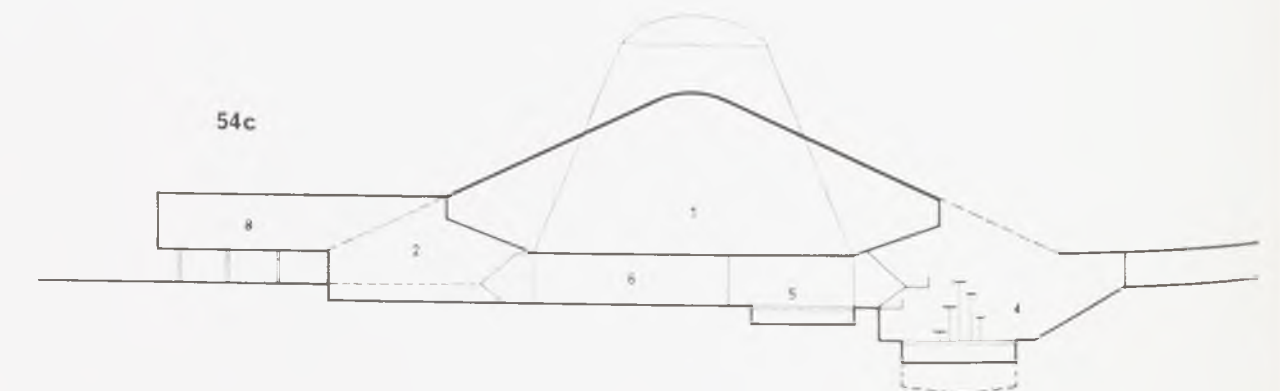
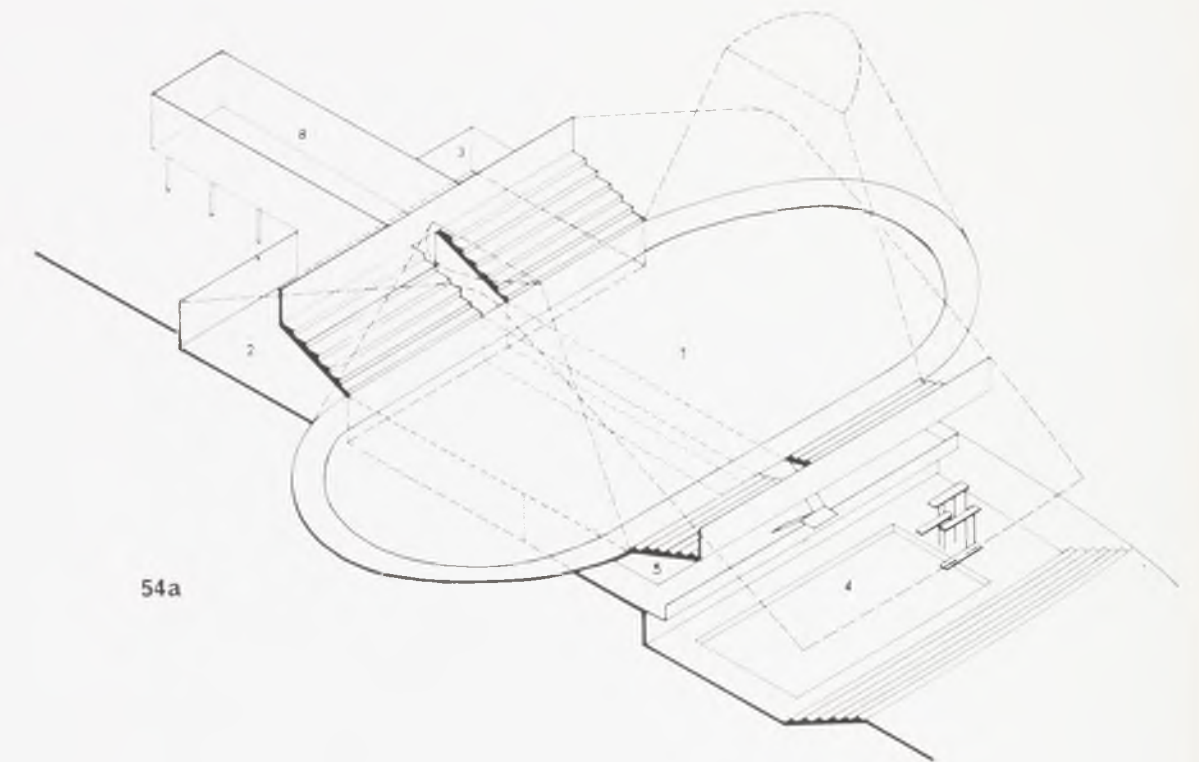


A Physical Education Centre

54a Sectional isometric diagram of the Physical Education Centre indicating the relationship of its parts.

54b Longitudinal section through central hall.

54c Cross section through central hall, etc.



The Brotherton Library

- 1 The Brotherton Library needs to expand its facilities for both book storage and reading – yet the present buildings are so hemmed in by others that no appreciable increase of space can be easily contrived. Moreover, although a very large additional bookstack will be required ultimately, this only needs to grow through the years as more books are acquired. These problems have been discussed at length with the Librarian and two alternatives seem to be possible. The first is to demolish sufficient buildings adjacent to the Brotherton – but at present occupied by other departments – to allow the building of all the library extensions required now and likely to be required in the future. The second is to build adjacent to the Brotherton building only that accommodation which is absolutely necessary to house more books and administrative offices; this would involve the building of a separate 'working' library and large reading room in some other strategic position in the University precinct. The latter course would imply that the Brotherton would come to be regarded as the main research library of the University while the new, separate reading room for, say, 800 students with a library of 30,000 to 50,000 books would be, in a sense, the undergraduate library.
- 2 Although the arguments – both administrative and academic – for the total centralisation of library facilities are strong, a limited degree of decentralisation seems inevitable, if not desirable. Already separate sectional libraries exist serving the faculty of Medicine, the Institute of Education, and the departments of Law and Agriculture. Nearly every head of department interviewed has stressed the importance of a small special library for departmental students – not as a substitute for but as a supplement to – the facilities provided by the Brotherton. As the University grows this diffusion of small libraries will probably also grow but – so long as a sense of proportion is preserved and an unnecessary duplication of Brotherton facilities is avoided – there would seem to be nothing objectionable about this development. The need for the synoptic index in the Brotherton would be essential because in this would be recorded the whereabouts of all books and sources of information within the University precinct whether these are housed in the main Brotherton building, in the new extension to this, in a new working library, or in the existing section and departmental libraries.
- 3 We recommend that the extensions to the Brotherton building should be limited to a new bookstack and more administrative offices, and that a working library should be built elsewhere because this has many inherent advantages and because it is the only practicable way to provide at least some of the additional reading space needed by undergraduates in the near future. An important consequence of providing a separate working library would be to relieve pressure on the main Brotherton building which could revert to its former – and proper – function of

serving those students who need the resources provided by its extensive bookstacks. The Brotherton is so valuable as a source of research that it should not come to be used – as it sometimes has – merely as a reading room.

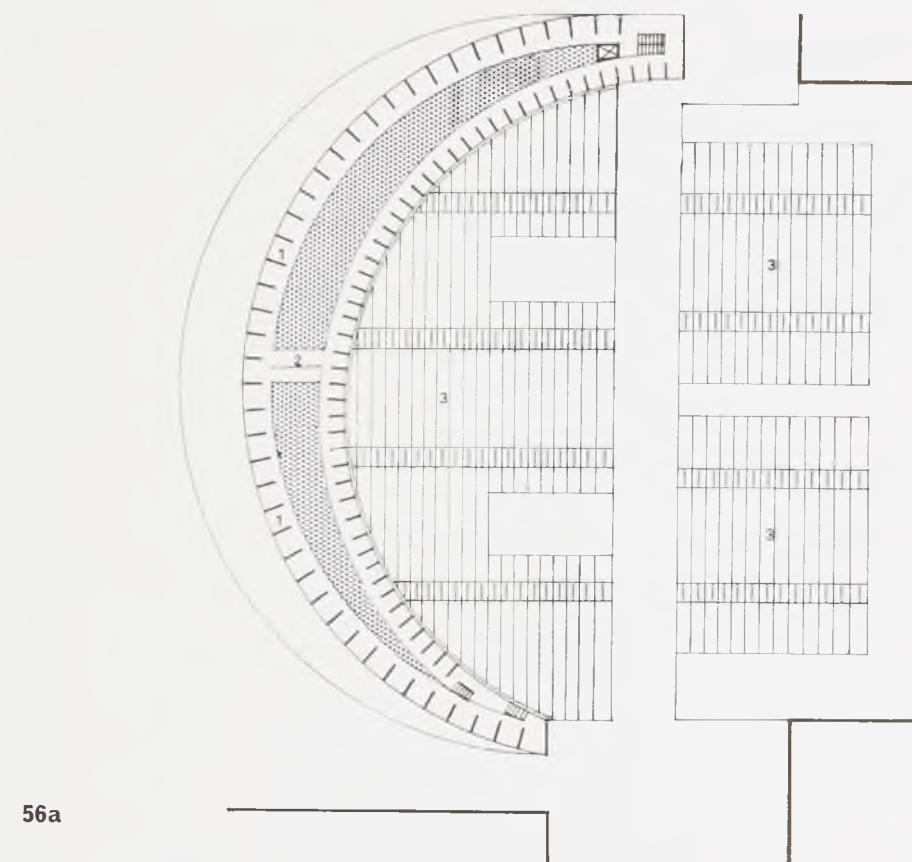
- 4 It is proposed that the new bookstack required for the main Brotherton building should be built on the west side of the present library and that it should be so designed that it can be added to at five yearly intervals to keep pace with shelf requirements. Specifically, we recommend a building which will contain on a single floor the additional shelving required to meet a five year demand, complete with all necessary services and reading bays. Additional whole floors could be added at quinquennial intervals so that the bookstack would grow upwards through the years – rather like a giant anthill. To avoid the difficulty of building on top of an existing structure (which involves the erection of scaffolding or cranes to raise the materials needed for the new floor), we suggest that the possibility should be investigated of including hydraulic jacks at ground floor level which would enable the entire superstructure to be 'lifted', thus permitting the introduction of the additional floor at ground level (56d-e).
- 5 The reading room of a working library to provide for as many as 800 readers could be, because of its size, a large and bleak space filled with row upon row of tables; this would not encourage students to make use of it. Once a particular book has been selected it is a familiar instinct to wish to retire into a corner to read it, rather than to sit at a table in an exposed, institutional atmosphere. For this reason, therefore, we felt that a building containing many hundreds of corners was needed rather than a large hall. Such corners can, of course, most easily be provided in the form of small carrels or reading bays which may be assembled in a variety of ways – side by side, one above the other, or both – to form a building long or wide, high or low, straight or curved. In order to create a building which, in its form, would both serve its primary purpose and contribute to the layout of the University as a whole, we propose that the working library should be designed in the form of an arc on plan sited to enclose one end of the open space reserved for university convocation referred to elsewhere. At ground level within this building would be the bookshelves and some open tables for reading. Rising above this, on staggered levels approached by easy ramped stairs leading to open galleries, would be the tiers of carrels into which students could withdraw to read and study. Crowning the building would be a stepped roof serving, when required, as gallery seating overlooking the convocation area. The form of such a building, both internally and externally, would be dramatic and distinctive, yet at the same time functional. Entry and exit to the working library at ground level would be by a single entrance simplifying control. It is proposed that a University art gallery should be planned adjacent to the working library where its existence – and its displays – would be apparent to all who

would regularly frequent the library. The planning of the access to both library and art gallery, therefore, could be so contrived that the same staff could control the use of both. This would be both practical and economic since many works of art may not be borrowed for display unless constant surveillance can be provided; this supervision cannot often be afforded unless the staff needed are able, at the same time, to be employed on another necessary function (55a, 56a-c).

55a Ruins in the Villa Adriana, near Tivoli

The semi-cylindrical shape of the remains of the Nymphaeum suggests the form and scale of the proposed Working Library.





The Working Library

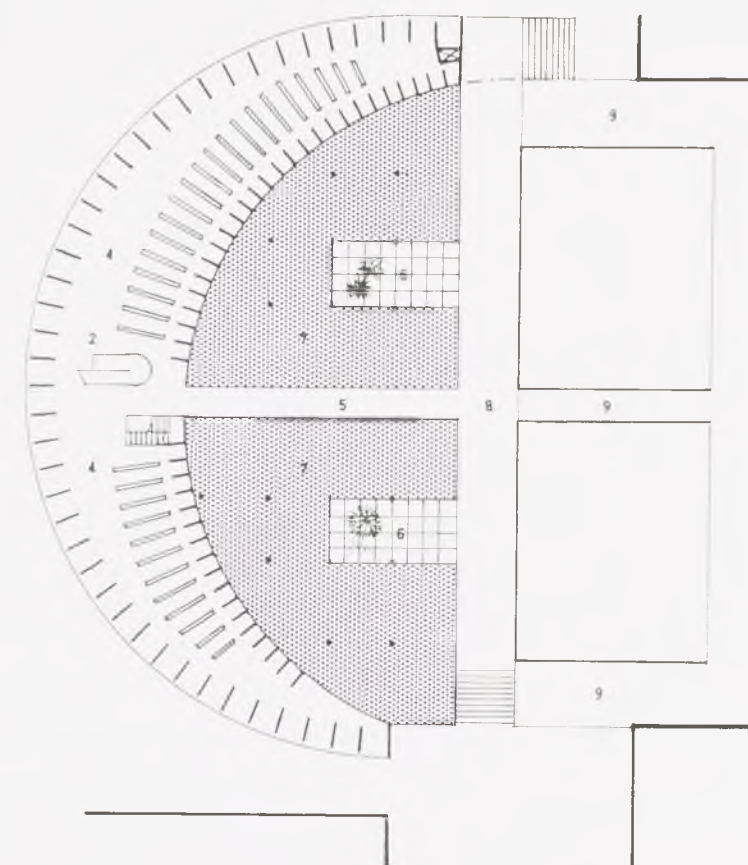
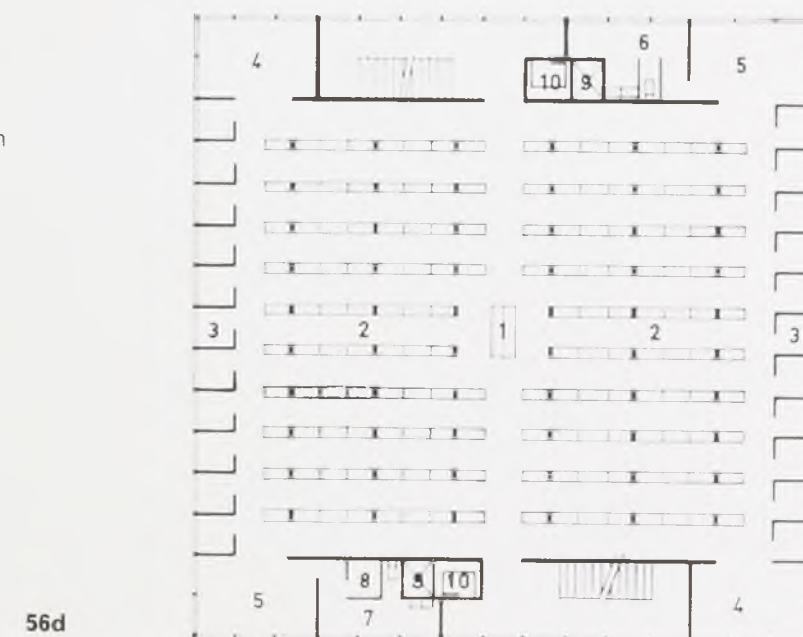
56a Plan at upper level above the terraced seating in Congregation Court.

56b Plan at mezzanine level in University Art Gallery.

56c Section and isometric projection showing the relationship between the Working Library and the University Art Gallery.



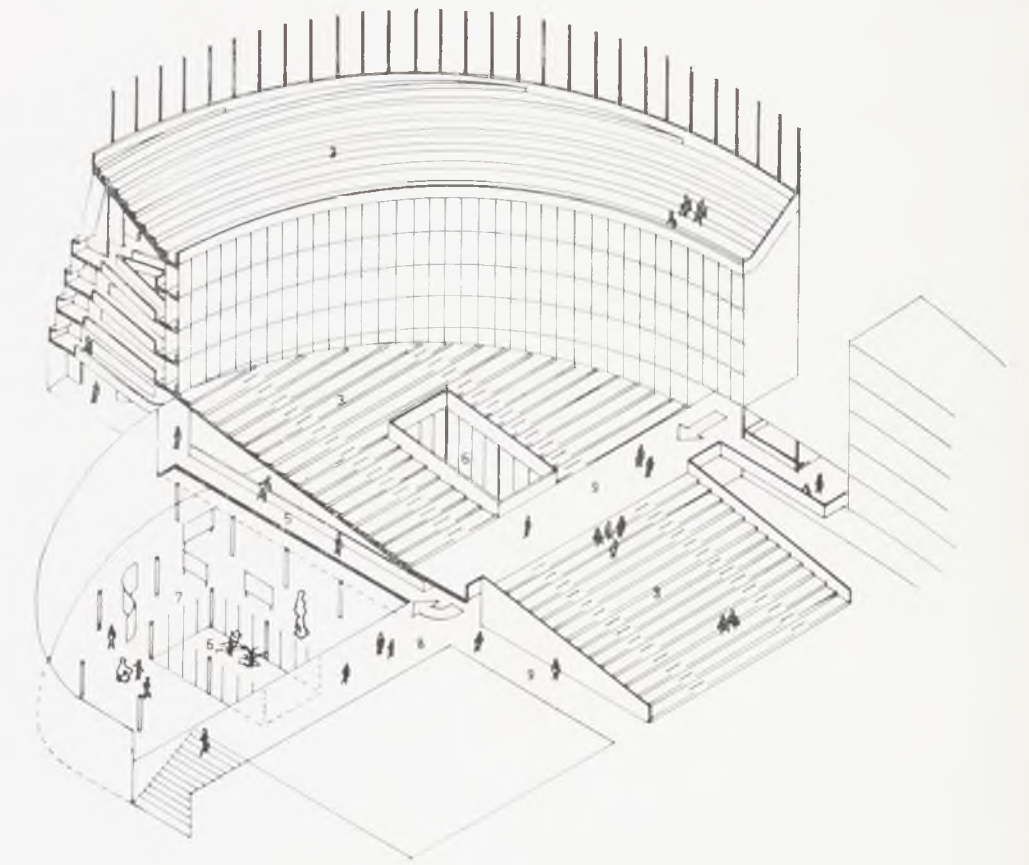
- Key
- 1 Index
 - 2 Book Stacks
 - 3 Carrels
 - 4 Assistant Librarian
 - 5 Reading Room
 - 6 Male Lavatory
 - 7 Female Lavatory
 - 8 Cleaner's Room
 - 9 Duct
 - 10 Lift



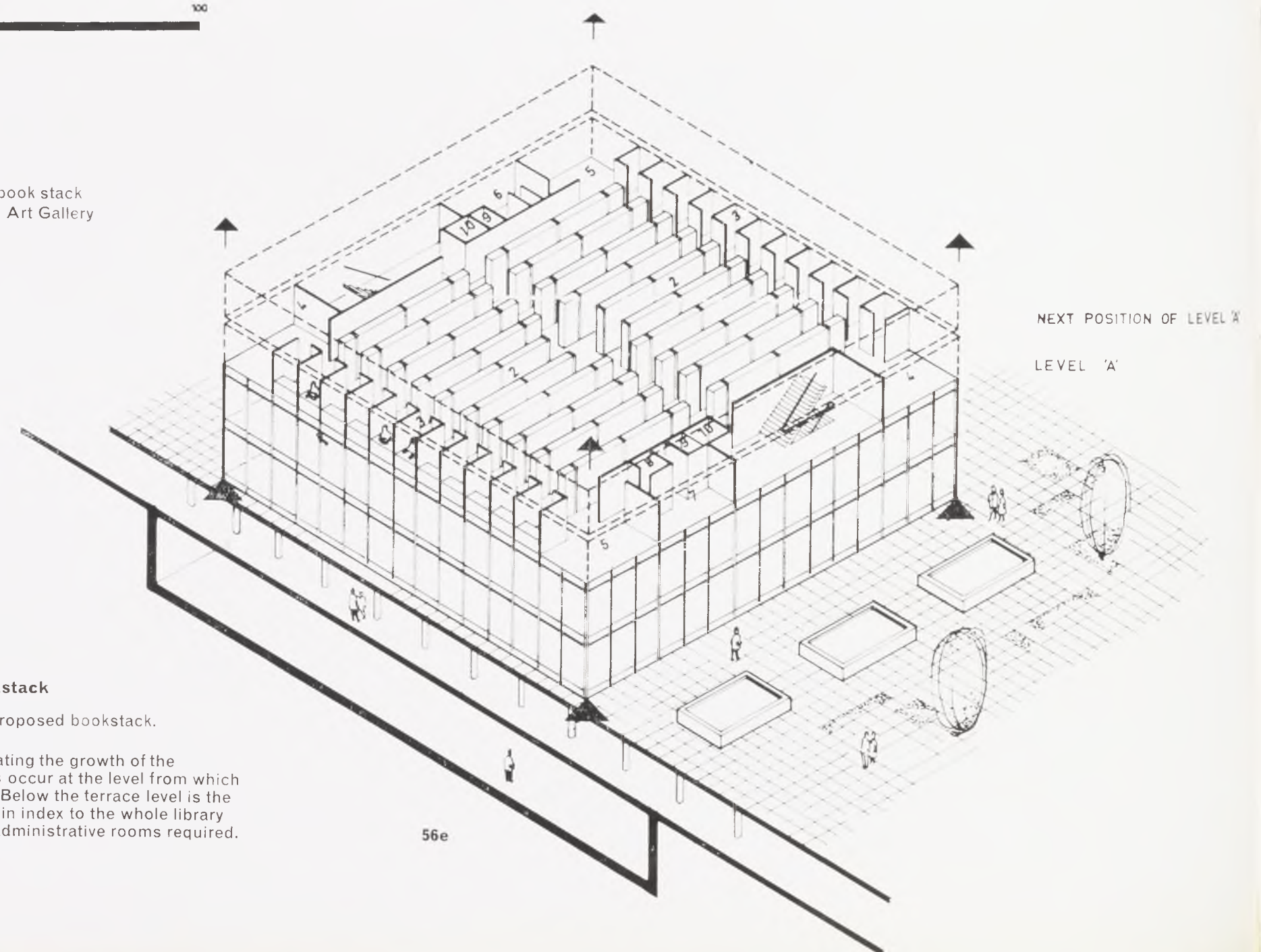
56b



- Key
- 1 Galleries of carrels
 - 2 Ramp
 - 3 Terraced Seating
 - 4 Open Reading Floor and book stack
 - 5 Approach Bridge through Art Gallery
 - 6 Open Sculpture Court
 - 7 Art Gallery
 - 8 Covered pedestrian route
 - 9 Open pedestrian route



56c



56e

The new Brotherton bookstack

56d Plan of typical floor of proposed bookstack.

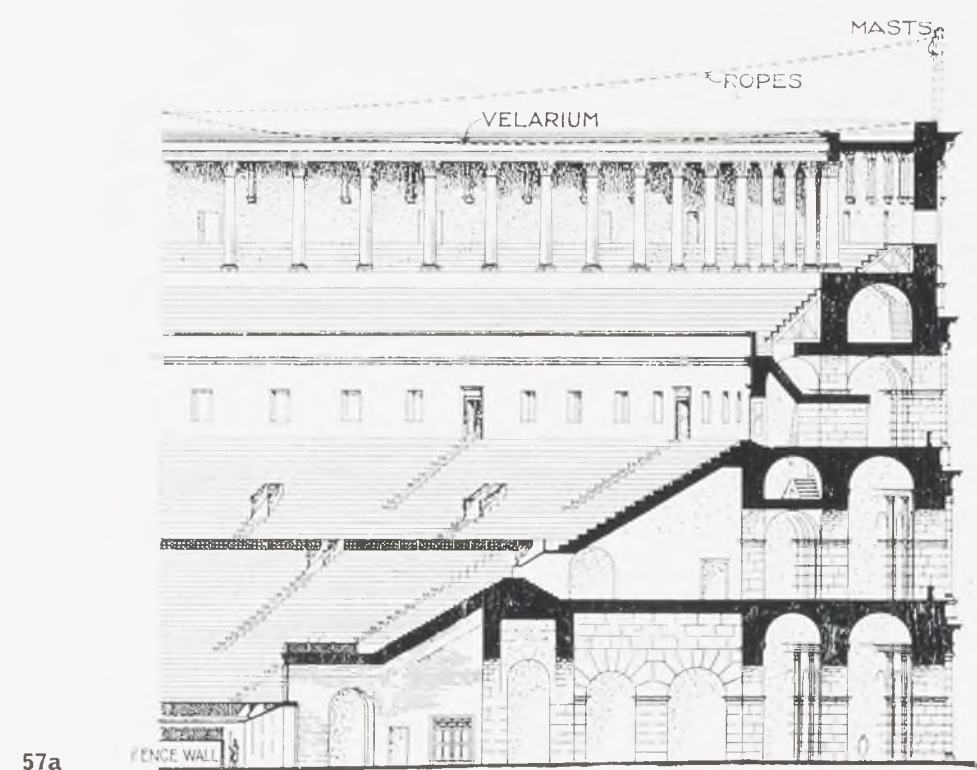
56e Isometric drawing indicating the growth of the bookstack. The large arrows occur at the level from which the 'jacking up' would start. Below the terrace level is the main entrance lobby, the main index to the whole library and some of the additional administrative rooms required.

A place for congregation

- 1 One of the stated needs of the University is for a Great Hall large enough to accommodate most members of the University and a number of visitors on special occasions. These functions are so few and far between, however, that it is difficult to justify the building of a large and costly Great Hall for such occasional use. Nevertheless, the academic climax in the University calendar occurs when degrees are awarded to students and this is undoubtedly an annual event which merits some display of ceremony. At present, there is no hall within the University – or in the City of Leeds – large enough to hold, at one sitting, the congregation which assembles, so large are the numbers of students and relatives who attend.
- 2 We have, therefore, considered ways and means of providing a space large enough for the holding of a degree ceremony, particularly bearing in mind how large will be the congregation if and when the number of students rises to seven thousand. A factor of particular significance in this connection is that the ceremony of awarding degrees always takes place in June when the weather can be expected to be warm (if not necessarily dry) so that a centrally heated, fully enclosed, building is not necessarily required for this function. Three types of building (one from the ancient world, one from the modern world and one from what might be called the 'nomadic' world) deserve comment as indicative of how other people in other times have tried to meet a demand not dissimilar to that which now faces the University. The ancient Colosseum in Rome was built with its arena surrounded by tiers of seats protected from the rain and sun by a great canvas velarium supported on ropes hung from masts. The Galleria in Milan is an arcade (not an unfamiliar form of building in the City of Leeds) which assumes the proportion of two large streets laid out to intersect in a cruciform plan but reserved absolutely for pedestrians, flanked by buildings several storeys high and roofed with glass. The 'big top' or giant tent supported on a single central pole can be erected and dismantled with surprising speed and frequency for the holding of circuses and – lest it is overlooked – for the protection of commemoration balls in the old universities which are also held in high summer (57a, 57b, 57c).
- 3 Mindful of these examples of how large groups of people have been accommodated in the past and present we propose that some of the buildings needed by the University should be laid out to enclose a large, formal open space, paved and stepped, with a giant mast within it to support, when required, the centre of a canvas velarium supported on cables stretched between this and a series of encircling masts fixed to the buildings. The many windows overlooking this space – particularly the box-like carrels of the working library stacked one above the other – will appear not unlike the interior of a renaissance theatre – and in fact can be so used. In addition to its use for degree awarding

ceremonies, as hinted earlier this space could also be used for the holding of a University ball or, if equipped with sound amplifiers and designed with acoustic considerations in mind, it could be used by large conferences during the long summer vacation. (The existence of a large number of study-bedrooms as planned could – for this purpose – supplement the existing hotel accommodation in Leeds.)

- 4 This court, flanked on the north by the Institute of Education and departments of Adult Education and Extra-Mural Studies, on the east by the University Theatre and Concert Hall, on the west by the Working Library, and on the south by part of the Physics department, would become one of the series of inter-connected courts foreseen in the development plan. This court might be called 'Congregation'.



57a

57a The Colosseum, Rome

Section through a reconstruction of the Colosseum, showing the velarium. (From a History of Architecture by Banister Fletcher).

57b The Galleria, Milan

(From Italy Builds, by Kidder Smith).

57c The interior of La Scala opera house, Milan

Photograph showing the encircling tiers of boxes round the auditorium.



57b



57c

A University Art Gallery

- 1 Because the late Eric Gregory gave unique encouragement to the understanding and promotion of the visual arts – and backed this with equal generosity – it is only fitting that consideration should be given to the provision of a University Art Gallery. Such a gallery would provide not for the permanent display of works of art bequeathed to the University (which should have their own particular and appropriate setting) but for loan exhibitions of one kind or another. In order to seduce the attention of the casual passer-by, the Gallery should be sited on a main circulation route. Because some of the most useful and informative collections of paintings, prints and sculpture may not be borrowed unless constant supervision of their display can be guaranteed, it is important to plan to provide this supervisory service economically.
- 2 To satisfy these requirements, the Art Gallery as proposed is sited at the west end of one of the main courts and is closely associated with the new Working Library. It is planned in this position both to attract the attention of the many students who will daily visit this Library and also to take advantage of the services of the supervisory staff who will anyway be required in this building. The Art Gallery as proposed is partly sunk in the ground and largely top-lit in order to provide large walls for paintings and plenty of space for the erection of display screens or the arrangement of sculpture. The main approach to the Library and to the gallery from the 'Congregation' court is by a bridge which passes through the upper part of the Art Gallery and serves as a vantage point to overlook the display below; direct access to the Gallery – as distinct from a view over it – can only be obtained by passing through a control point in the Working Library before descending a staircase to the main gallery floor.
- 3 As this Gallery would come under the direction of the Head of Fine Art it would, therefore, be appropriate for the other room required by this department to be contained in an adjacent building and this could be arranged.

A University Theatre and Concert Hall

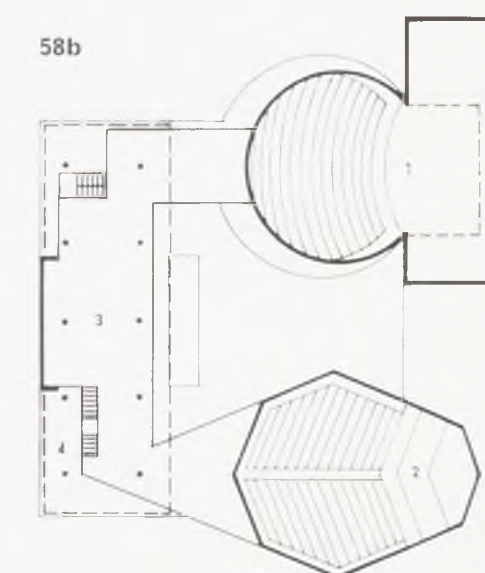
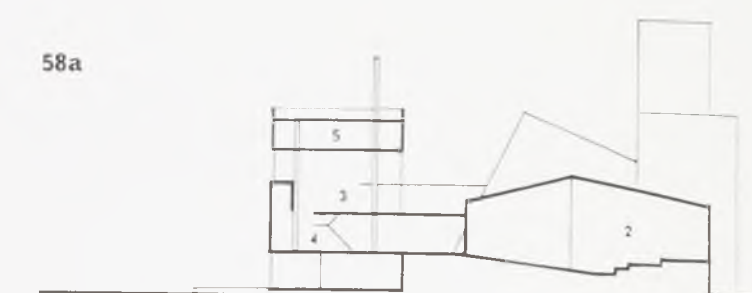
- 4 The need has been established for a small, properly equipped and designed University theatre, and for a small concert hall needed by the Music department. It is not possible to design a single auditorium which would equally well serve both functions and this would, in any case, lead to administrative and practical difficulties about the prior right to its use. It is possible, however, to design a building in which these foyers can serve both auditoria; this would have the advantage that the foyers could justifiably be designed to be gracious in scale which is important in a city like Leeds where the extremely poor provision for live drama and music suggests that plays and concerts in a University building would – and should – be well patronised by the citizens of Leeds as well as by the students of the University (58a – c).
- 5 The Music department needs a number of small rooms for lectures, music practice, etc. It is proposed that this accommodation should be planned in a podium below the foyers and auditoria at one end of the court on to which it faces. The main foyers, intended to close the court at its east end, would be designed to form a backcloth to the summer degree awarding ceremonies which would take place on the dais. This space could also, of course, be used for open air drama where the proximity of dressing rooms in the theatre building would be convenient. The back stage of the theatre, with fly-tower and side stages, is planned adjacent to convenient road access for the delivery of scenery etc.

A University Theatre and Concert Hall

58a Cross section.

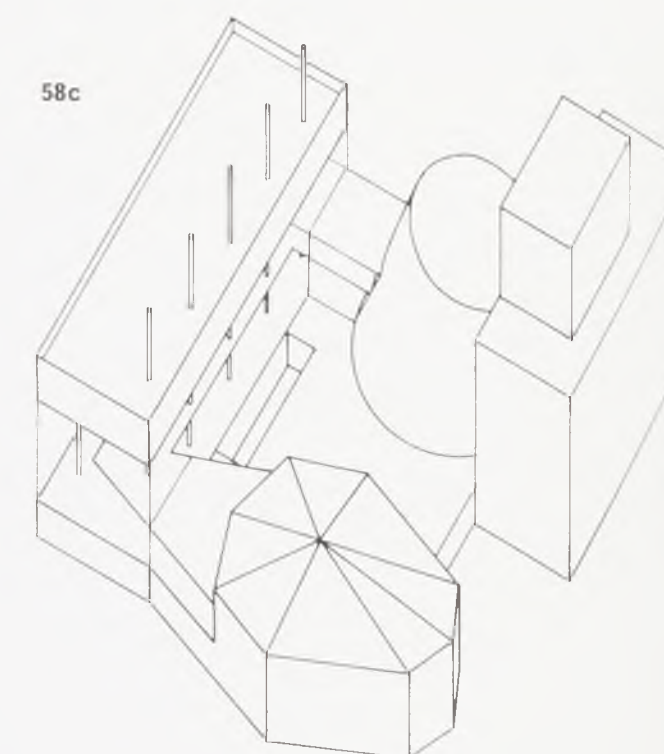
58b Plan at entrance level.

58c Axonometric projection of this group of buildings indicating the plastic relationship of the various parts.



- Key
- 1 University Theatre
 - 2 University Concert Hall
 - 3 Upper foyer
 - 4 Lower foyer above Department of Music
 - 5 Administrative Offices

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SCALE IN FEET



The Senior Common Room

- 1 It is now a matter of some urgency for the Senior Common Room to move to a new building in order that the accommodation which it now occupies in University House can be made use of to provide the extended catering facilities which will shortly be needed by the students. To meet this urgent need, it was necessary to decide on a site adequate in size, convenient in its situation relative to the rest of the University, and which will be available for building in the near future – three requirements difficult to satisfy. The site proposed is within the area first to be designated for clearance by the City authorities and it should be possible to make it available as soon as building work can start on site. It is adequate in size for the substantial building which will be required.
- 2 By some, the proposed siting of the Senior Common Room may be regarded as a little too far south in the development plan for convenience to all the senior members of the University – a disadvantage which it is hoped will be mitigated by the attractions to be expected of the site when fully developed since, to the east, the prospect from the building will be over one of the principal courts and, to the west, the prospect will be across a garden. It may not be without regret in some quarters that the student members of the University are to be accommodated in a building totally separated from the new Senior Common Room, as this suggests a discouragement to social intercourse between staff and students which, at least in theory, should be beneficial. That University House and the new Senior Common Room should be separated by only a garden may help to overcome any reluctance to set them apart

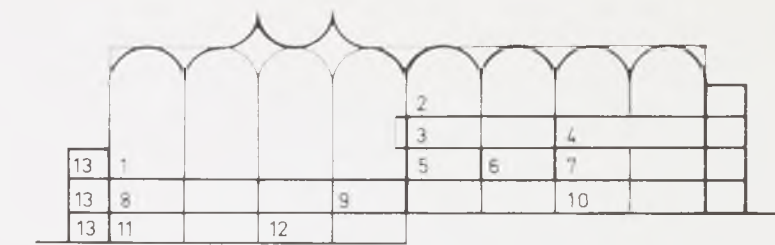
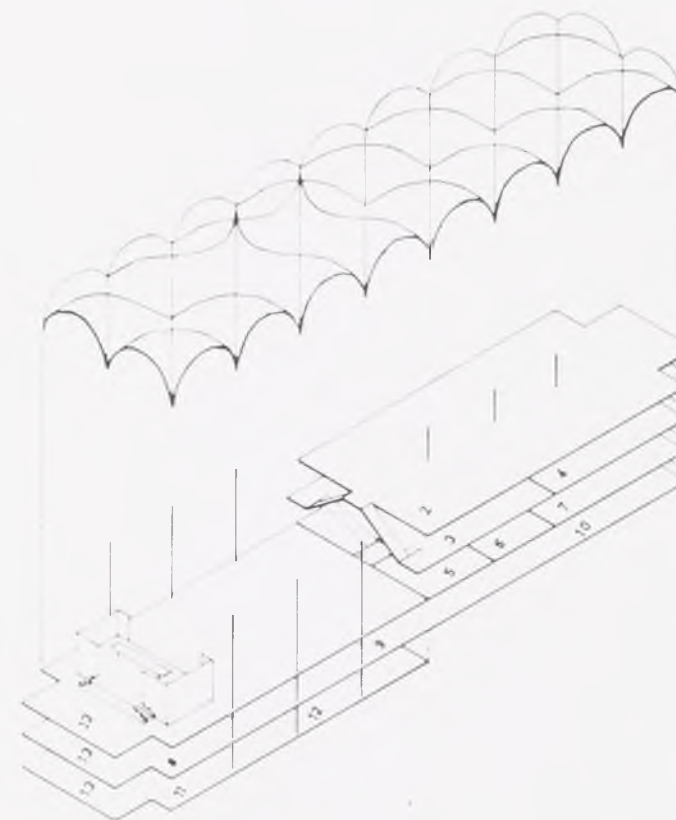
since, if well laid out and maintained, this should provide an inducement – in good weather – for all members of the University to meet informally. An orangery linking these two buildings planned for the senior and junior members of the University might be introduced with the express purpose for it to be used as a meeting place for informal conversation as was the 'stoa poikele' in ancient Athens.

- 3 The new Senior Common Room building is to provide dining rooms, common rooms, library, and recreation rooms. Although most of the rooms are required for informal gatherings, it seems to be appropriate that at least the main dining hall for the academic staff of a thriving university should be a room grand in scale and noble in conception. For this reason the preliminary design is of a room based on the proportions of a double cube, crowned with a vaulted roof, furnished with long refectory tables rather than small ones so suggestive of a canteen or tea-shop; occupying one quarter of this space, on a slightly raised dais, a high table is suggested which can be screened from the rest of the Hall when not required for special occasions. At the opposite end, on a gallery, is the main common room also planned beneath a vaulted roof; below this are the other common rooms, the reading room and the library. Access between common rooms and dining hall would be by a grand staircase so designed that, as members descend from the common room, they overlook the Dining Hall laid out below them and can select the table and the position at which they wish to sit for their meal. To take advantage of the slope in the ground, the recreation rooms are planned at upper ground level with the kitchens located at a lower ground floor at the south end of the block (59a, 59b).



59a The painted hall at Greenwich

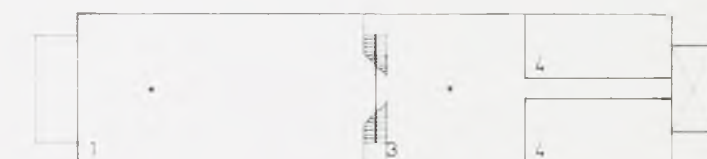
Showing the fine proportions of the room, the long, simple tables and the dais at the far end beyond the screen wall.



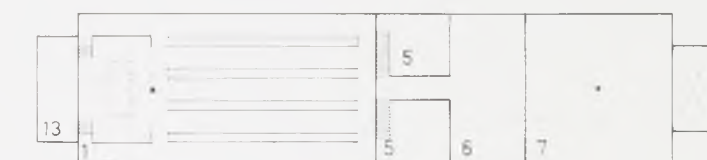
LONG SECTION



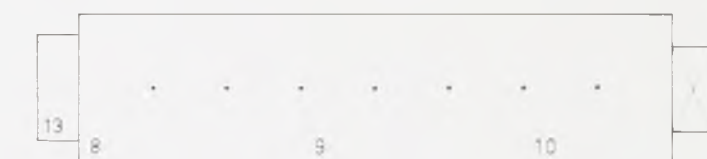
THIRD FLOOR



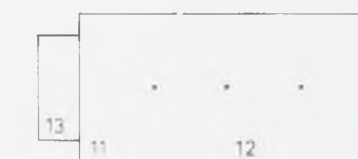
SECOND FLOOR



FIRST FLOOR



GROUND FLOOR



LOWER GROUND FLOOR

Key

- 1 Dining Hall
- 2 Large Common Room
- 3 Common Room
- 4 Small Common Room
- 5 Sitting Room
- 6 Reading Room
- 7 Library
- 8 Small Dining Rooms
- 9 Recreation Rooms
- 10 Bar
- 11 Kitchens
- 12 Administration
- 13 Serveries



SCALE IN FEET

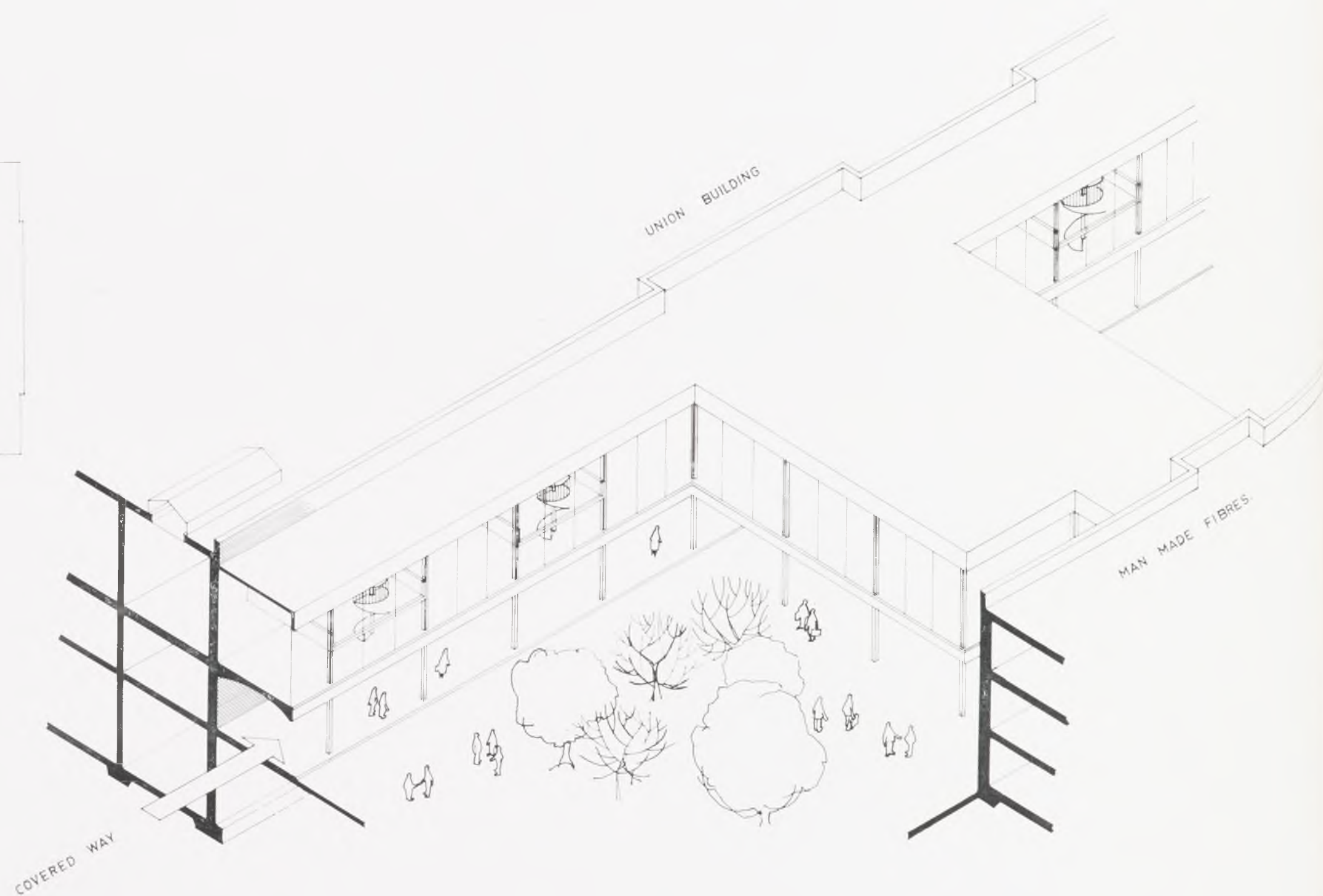
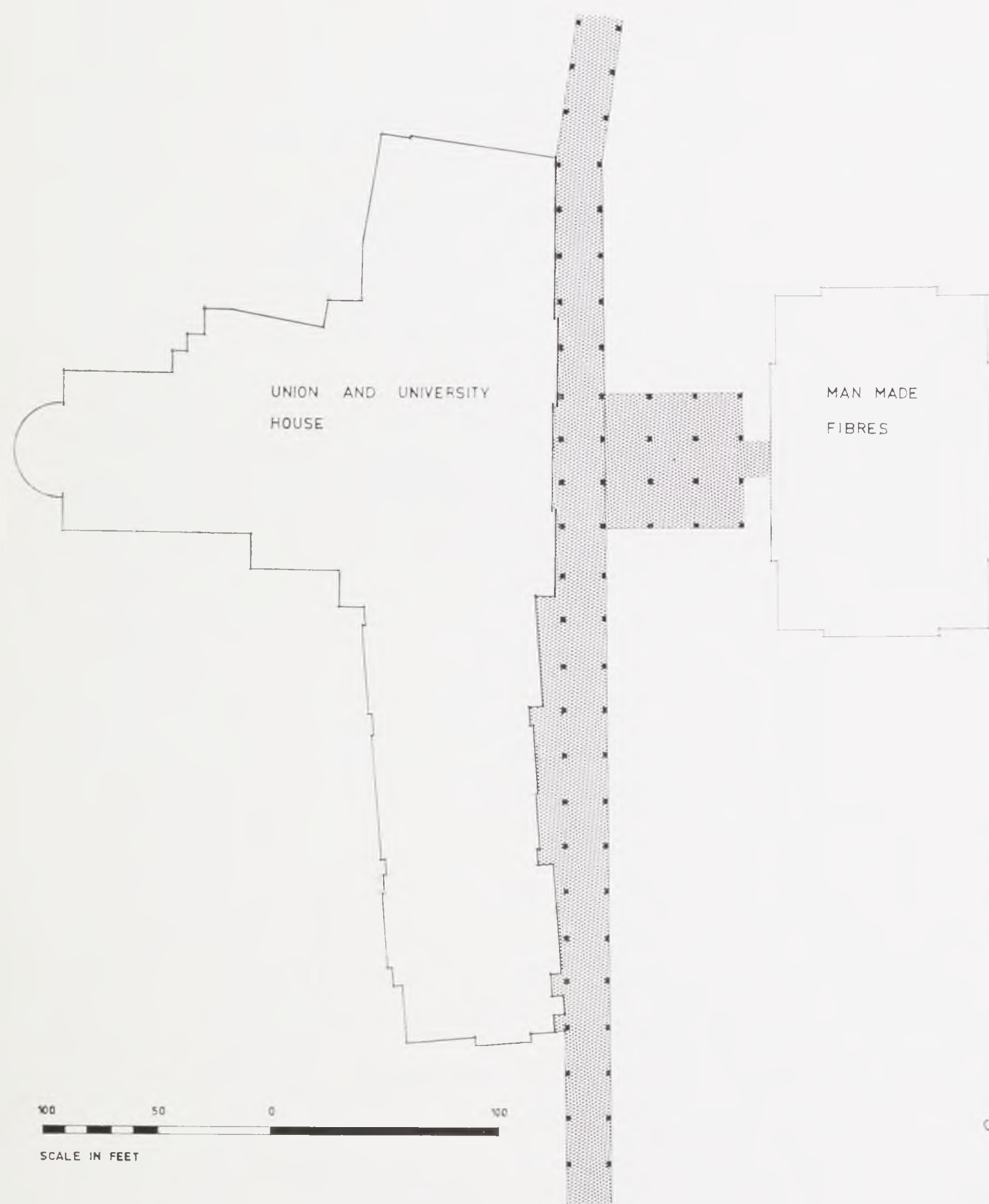
59b Senior Common Room

Typical floor plans, Section, and 'Exploded' isometric drawing showing relative position of principal rooms.

The Union and University House

60a The shaded area of the diagram indicates the possible extent of covered ways linking these buildings with other parts of the University. Above this area, the additional accommodation needed in these buildings could be built.

60b Isometric diagram indicating additions to the Union building, covered ways and an 'undercroft' near the main entrance.



The Union and University House

- 1 Three principal factors have influenced our proposals for the development of the Union and University House. The first is the need for expansion, the second is the need to provide covered access for pedestrians from the points to which cars have access, and the third is the aesthetic problem presented by the existing long, irregular brick façade which faces north (61b).
- 2 It is proposed that, extending from the port-cochère south of the new Arts wing of the Parkinson building, a colonnaded way should be built passing in front of University House and the Union to provide a weather protected link. Where this is built on to the front of the Union building, it is suggested that, at first and second floor level, further storeys should be built, rather in the form of loggias, in front of the existing façades to contain some of the additional accommodation needed. Opposite to the staircase in the south side of the Man-made Fibres building, it is proposed that this new 'façade' should expand both to provide more space and also to close the vista between these buildings (except at ground level where the columns supporting the superstructure would form a portico at the entrance to the Refectory) (61a, 60a, 60b).



61a The Bramante Loggia,
Cremona Cathedral

This loggia above an arcade – built in front of, yet contiguous to, the cathedral – suggests how the Union building might be added to on the upper floors which, at the same time, would provide a covered link at ground level.

61b The north elevation of the Union and University House



Students in residence

- 3 It is probable that the greatest single development which must be expected to influence the character of the University will be its gradual transition – within a generation – to a fully residential seat of learning. This change reflects the University's growth from being regarded as an institution providing higher education for its immediate geographical region to a university in the wider sense as a place where students foregather from all over the land because the opportunities and facilities offered in certain fields of study are unique.
- 4 There are various sites (indicated on illustration 63a) owned by the University which are already – or will be shortly – developed to provide Halls of Residence for students. All these sites are within $3\frac{1}{2}$ miles of the University and are easily accessible by the Otley Road which leads also, to the playing fields at Weetwood. Although not immediately adjacent to the University, most of these Halls enjoy the advantages of seclusion and generous layout in a fresh atmosphere. The areas of the sites are limited, however, and, when present plans are realised, will be fully developed.
- 5 If Leeds is to become a fully residential university it would seem to be desirable for as many as possible of the study-bedrooms to be within, or adjacent to, the University precinct. This would ensure the fullest use of all the buildings for as much of the day as is convenient, would obviate the need to travel – at least daily and perhaps twice daily – between the University and lodgings, would simplify the general catering problem, would provide a group of domestic buildings large enough in scale to hold its own against the great weight of academic buildings, and would ensure that the precinct is 'alive' during evenings and weekends.
- 6 Although the collegiate system characteristic of the older universities is not appropriate to Leeds, it is difficult to think about housing university students without being influenced by the familiar form of college buildings containing between 150 and 400 undergraduates in low blocks grouped round dining hall, library, and chapel. This domestic scale of building, with its sequence of quadrangles and courts, encourages a sense of community which can be comprehended; in contrast, it is not reasonable to expect students to feel much sense of personal identity with so large a unit as the University as a whole particularly if this grows in size to cater for some 7,000 students. Another characteristic feature of traditional college building – access to rooms by staircase – is a most subtle form of grouping which encourages intermingling between students of different faculties in an informal yet socially valuable way.
- 7 It is therefore proposed that most of the study-bedrooms should be planned in groups of between 6 and 10 on landings, served by staircases



62a A painting by Raphael

illustrating the value of a small, free-standing, uniquely identifiable building.

62b St. Jerome in his study

This painting by Antonello da Messina symbolises the classic concept of the scholar at his studies.

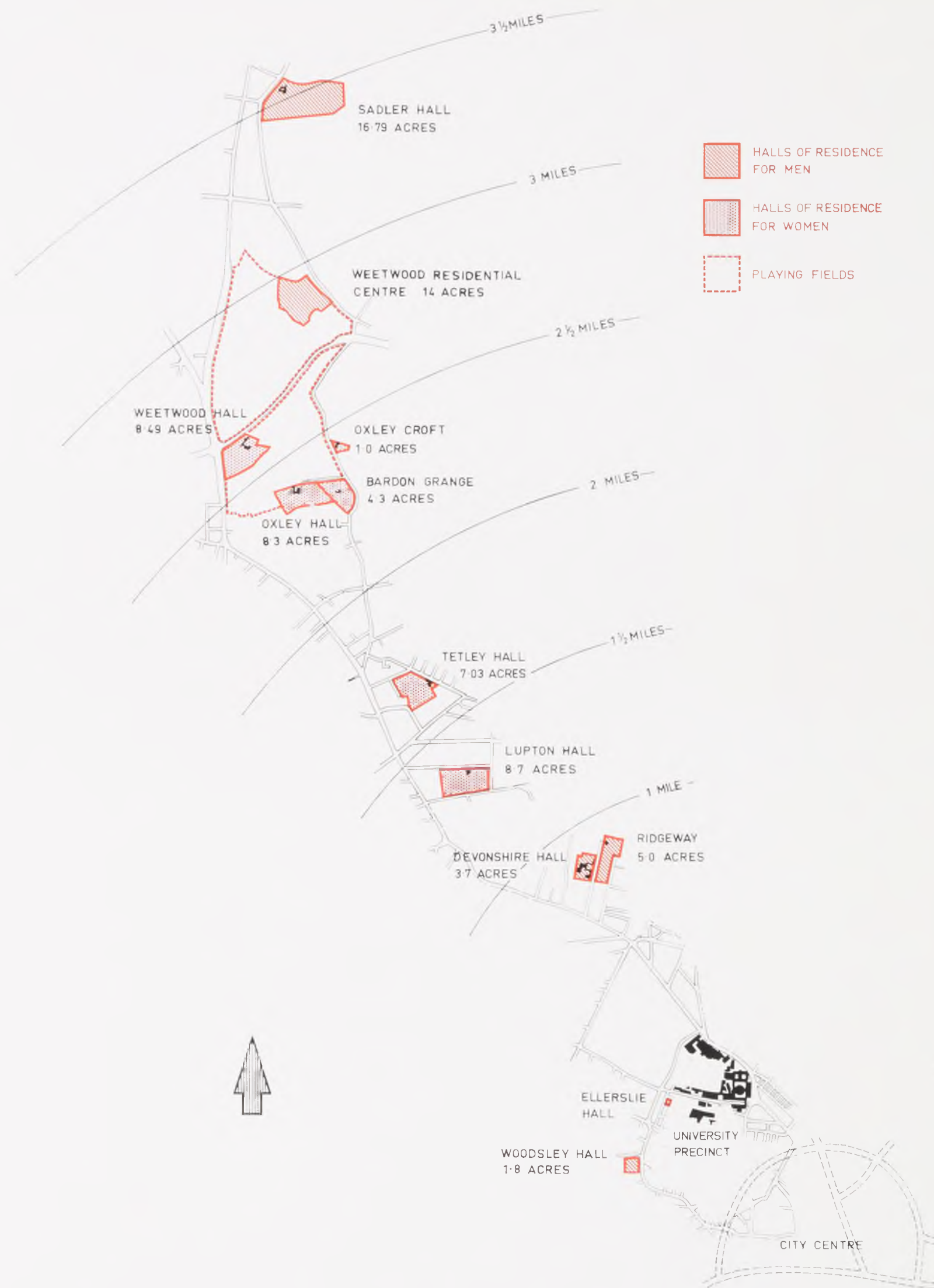


in blocks usually four storeys high. This social grouping round staircases of between 25 and 40 study-bedrooms ought to prove very satisfactory; the entrance to each staircase at ground level should be marked at least with a doorway and preferably with a porch – distinctive in form or colour – to simplify identification. Dining halls, modest in size and limited to a seating capacity not exceeding about 180, could be built to provide a focus for a series of staircases. These could be planned to accommodate both formal dining and a canteen service. As with the staircases, the dining halls should preferably be designed to be recognisably different from one another in their form. It may be thought to be necessary to provide also small common rooms and libraries dispersed amongst the staircases of study-bedrooms. On the other hand, with the facilities of an enlarged Union building within a very few minutes' walking distance from all the study-bedrooms, it may be considered to be more realistic for the residential students to make use of the several common rooms within this main building. There would also seem to be an opportunity to develop a first-rate students' library – largely devoted to fiction – on the scale of, for example, the Union library at Oxford.

- 1 There are certain other kinds of student – particularly some of the research and post-graduate students – for whom the encouragement of communal living is not necessarily appropriate. It is likely that, as time goes by, more and more married students will need accommodation and for these a small flat appears to be the most practicable solution. It would also seem to be justifiable to provide accommodation for research students who wish to become absorbed in their subjects and who feel that enforced contact with other people and other activities would be distracting rather than broadening. For these, we suggest the building of a number of 'scholars' cells', introduced in small groups related to the various departments where facilities such as laboratories, departmental libraries, etc., would always be easily available in the evenings, at weekends and during vacation periods. These 'cells' would be, in effect, study-bedrooms but designed to ensure privacy rather than to encourage social intercourse. We suggest that these 'cells' should be planned at ground level under the formal teaching blocks where they could be immediately accessible from the covered ways linking the various parts of the University. In this position they would have another important advantage. As departments change or grow through the years the need for staff may vary considerably and it is necessary to provide staff rooms accordingly. Just as it has been recommended that the multi-storey buildings should be designed so that partitions and door openings could be moved to accommodate expansion and contraction of departments, similarly the building of 'cells' at ground level would provide a reserve of small rooms which could, if and when needed, be converted for use as additional staff rooms. Such occasional conversions would not disturb the balance of accommodation within the University to any great extent and would not involve the usual difficulties

of having to find new rooms for the dispossessed since such changes could be planned to coincide with the departure of a student from the University.

- 2 Within the main residential area, and near to the Union building, a group of shops should be built including a grocer, tobacconist, chemist, etc. These shops would serve the same purpose as the butteries familiar in the older residential colleges and would also be convenient for students living away from the precinct in existing Halls of Residence or lodgings.
- 3 It should be borne in mind that the building of study-bedrooms implies the provision of a private study for each student and that this has repercussions on the provision of academic accommodation in the University as a whole. It should not be necessary, for instance, to provide so many small departmental study rooms. Nor should pressure on the reading space in the Brotherton Library be so acute since many students who now go there to make use of the space available rather than to use the real resources of the Library (particularly as examinations approach) will have their own studies into which they will be able to retreat.
- 4 In conclusion, therefore, we propose that provision should be made for at least 3,000 residential places within the University precinct in the form of study-bedrooms, flats, or 'scholars' cells'. In our view the most appropriate site for the bulk of the residential accommodation is on the high ground adjacent to Reservoir Street which is already zoned for residential development in the City Plan. If it is possible for any more adjacent land to be earmarked for a similar purpose in the future it would be prudent to consider the advisability of planning to provide residential accommodation for another 1,000 students. There is land on the opposite side of Woodhouse Lane, at present largely occupied by prefabricated buildings, which is zoned as residential and which could be used as an extension for university study-bedrooms or flats. If this possible use could be anticipated, it would be wise to build a subway for pedestrians linking this site with the University precinct under Woodhouse Lane when this road is ultimately re-aligned.

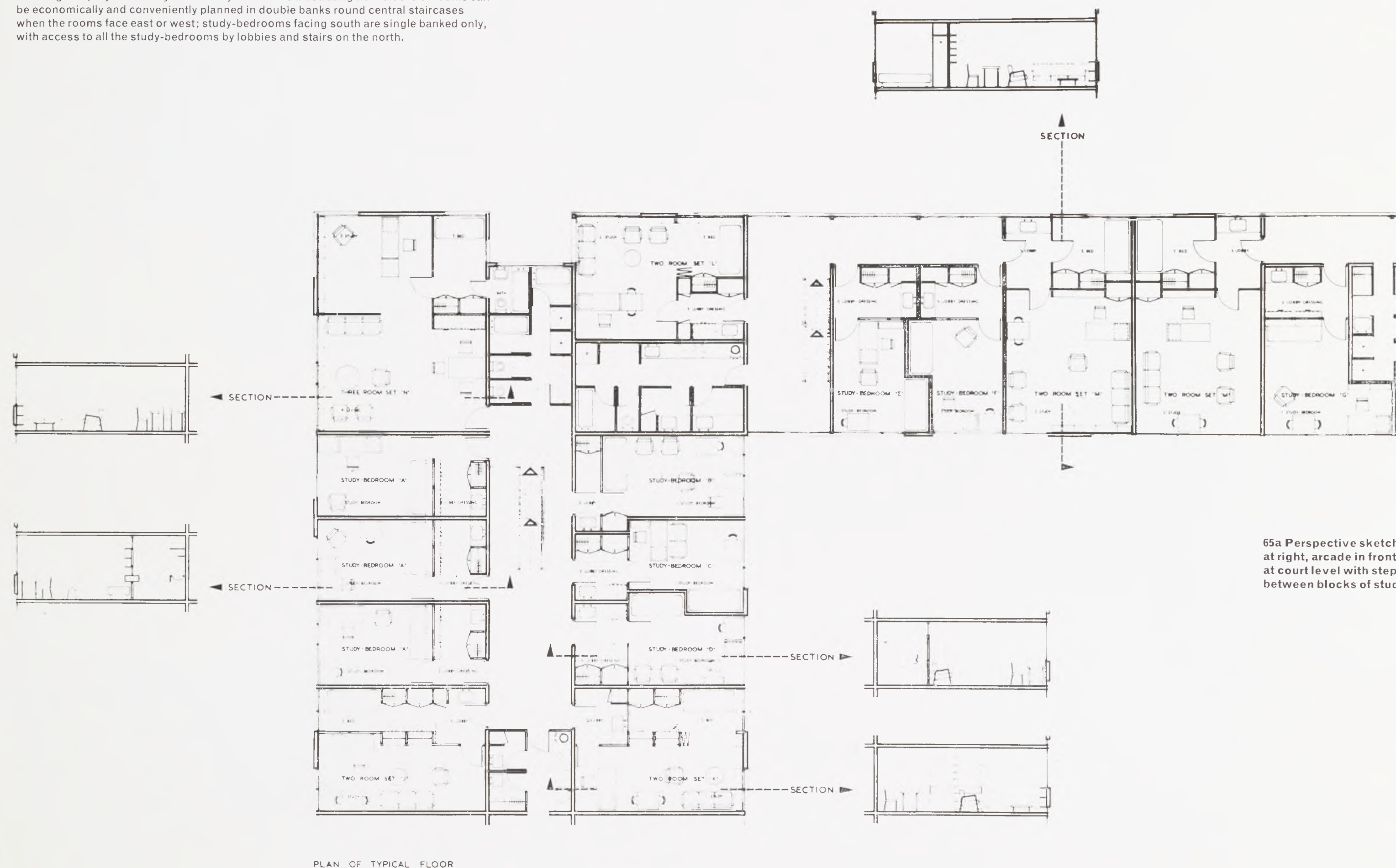


63a Students in Residence

Existing or planned Halls of Residence for men and women students and their relationship to the University precinct.

64a Study-bedroom layout

Drawing of a project for a layout of study-bedrooms illustrating how blocks of rooms can be economically and conveniently planned in double banks round central staircases when the rooms face east or west; study-bedrooms facing south are single banked only, with access to all the study-bedrooms by lobbies and stairs on the north.



65a Perspective sketch within Residential area; at right, arcade in front of shops; beyond, cafeteria at court level with steps leading up to Dining Hall between blocks of study-bedrooms.

Catering

1 The building of study-bedrooms on the main site – in whatever form – is inescapably related to the provision of additional catering facilities needed to meet the increased demand as the University grows in size. The social activity of students eating together should be regarded – particularly if a university is to be more than a factory of learning – as a matter of fundamental importance. Catering for large numbers is so difficult a problem in itself that there is a tendency to think of dining rooms as places designed to serve the convenience of kitchen staff rather than vice versa. This often leads to the over-large, impersonal canteen-type dining hall, vast, noisy and uncomfortable in scale, where the processing of food culminates in the processing of the diners.

2 We favour, therefore, the establishment of a number of relatively small, new dining rooms situated throughout the residential area and in the remoter parts of the academic accommodation such as adjacent to the new Medical School buildings. This desirable dispersal of dining facilities appears necessary, but need not be harmful to the social life of the University or impracticable from a catering point of view. Although it may be argued that communal eating provides the opportunity to 'mix' students of different faculties this does not have to take place on too large a scale; there are, in any case, other incentives to social intercourse such as the many University societies. From a catering point of view, provided serveries (where dishes and cutlery can also be stored and washed) are built adjacent to each dining room, food preparation and cooking can be carried on in centralised kitchens from

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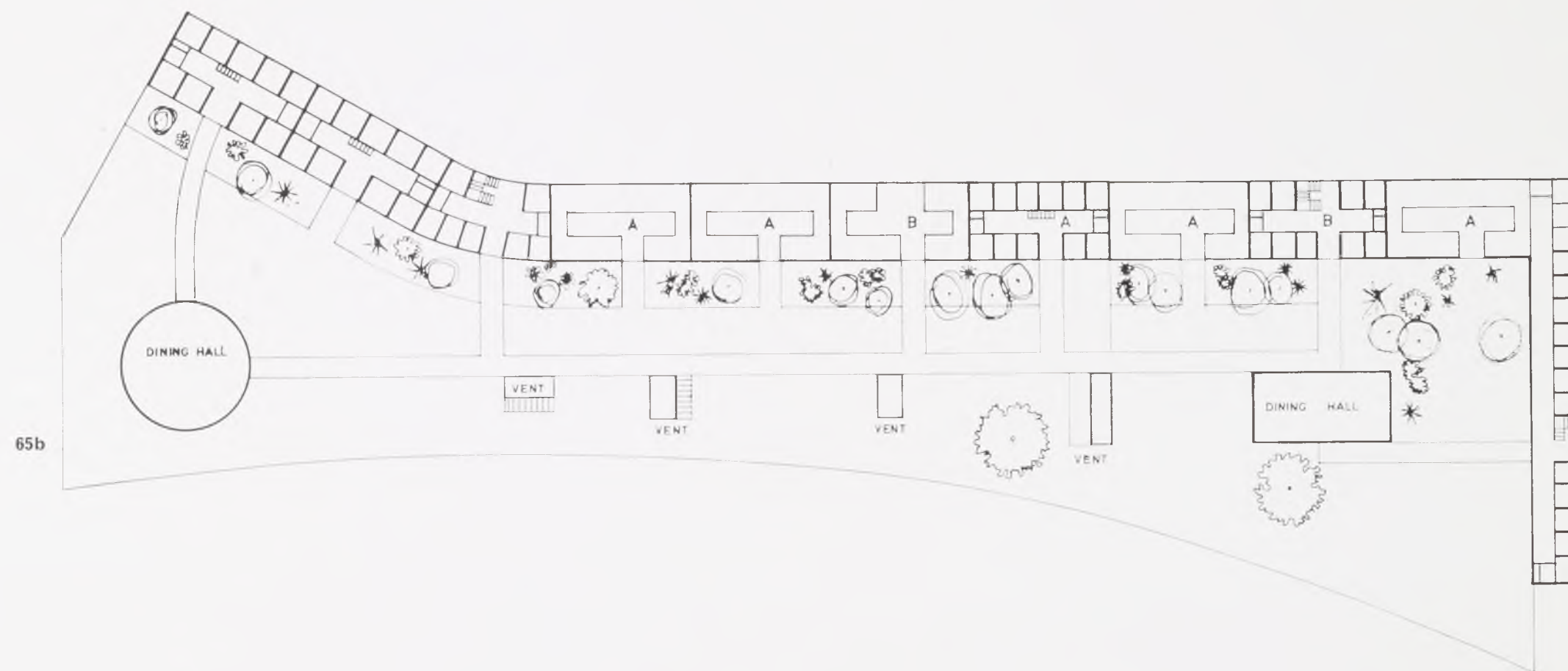
65a

A block of study-bedrooms

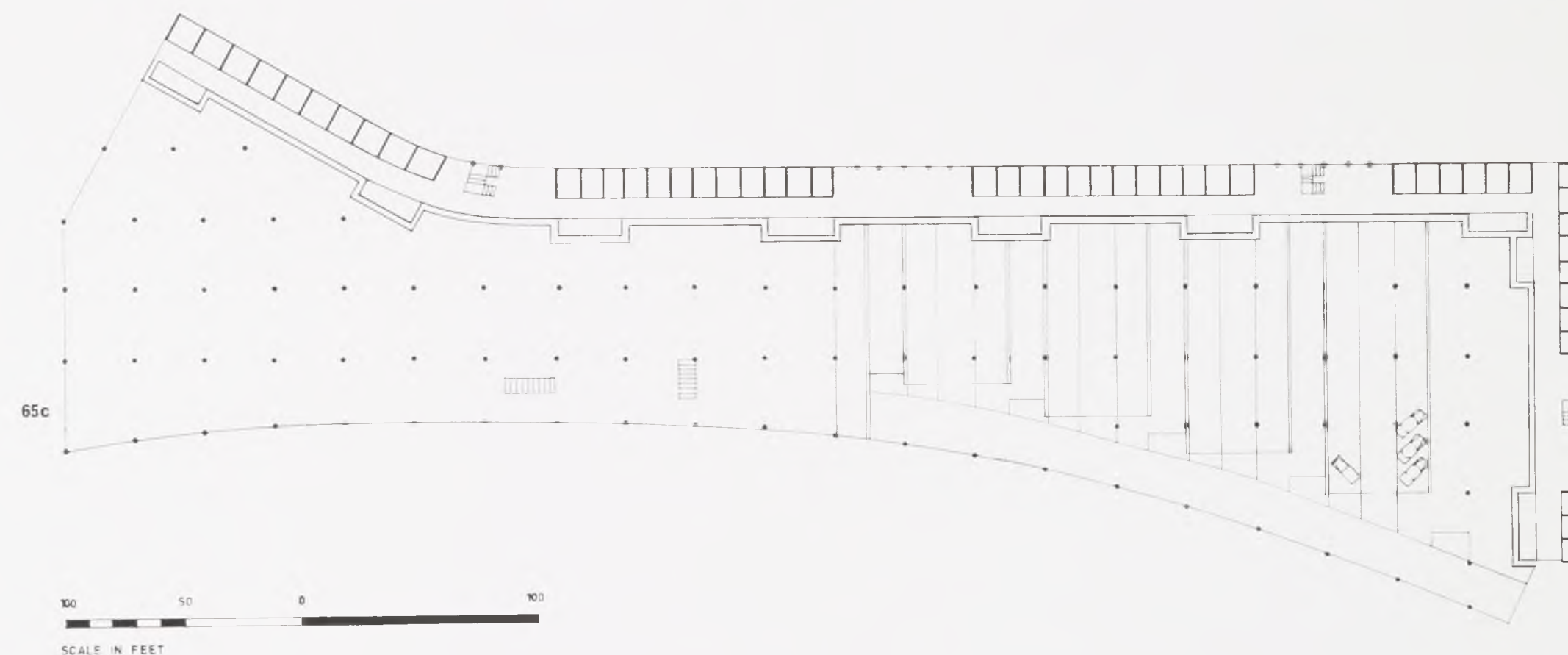
65b First floor plan of the proposed block of study-bedrooms next to Reservoir Street at the west end of the Cemetery; the Dining Halls are on the terrace.

65c Plan at ground level; study-bedrooms face into the University site; car-parking under the terrace lies between the rooms and Reservoir Street.

65d Section through terrace.



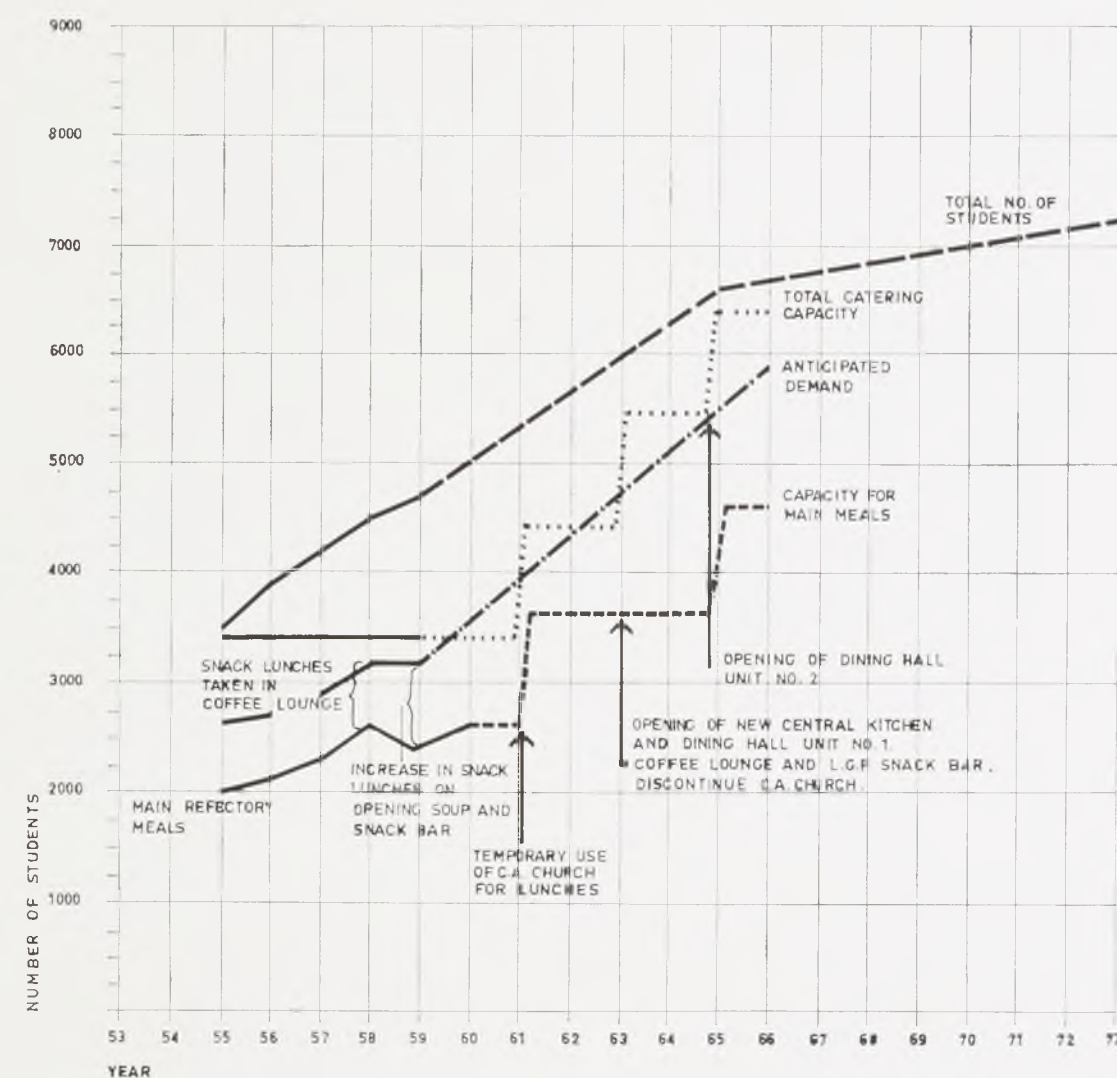
65b



65c



65d



66a Forecast of University catering requirements

This graph underlines the need to anticipate the catering requirements of the University as it grows and the need to plan to build the dining rooms and kitchens so that they are available when needed.

which the food can then be distributed to the dining hall serveries in electrically heated trolleys. An advantage of this system is that the same kitchens can be used for cooking breakfasts, luncheons, teas, and dinners, although some of these meals may be eaten in different dining rooms; on the whole, it is more likely to be possible to get the staff needed to man centralised kitchens than a series of small separate ones (66b-h).

- 1 We have had preliminary discussions with the University Catering Officer about the problems involved in preparing food in one place to be eaten in another; he has agreed to consider how this might be accomplished if it is decided, as a matter of policy, to distribute dining facilities in separate rooms among the blocks of study-bedrooms.
- 2 Since it is not possible to study effectively on an empty stomach, it is a matter of paramount importance to be sure that the catering facilities in the University keep pace with demand as student numbers grow –

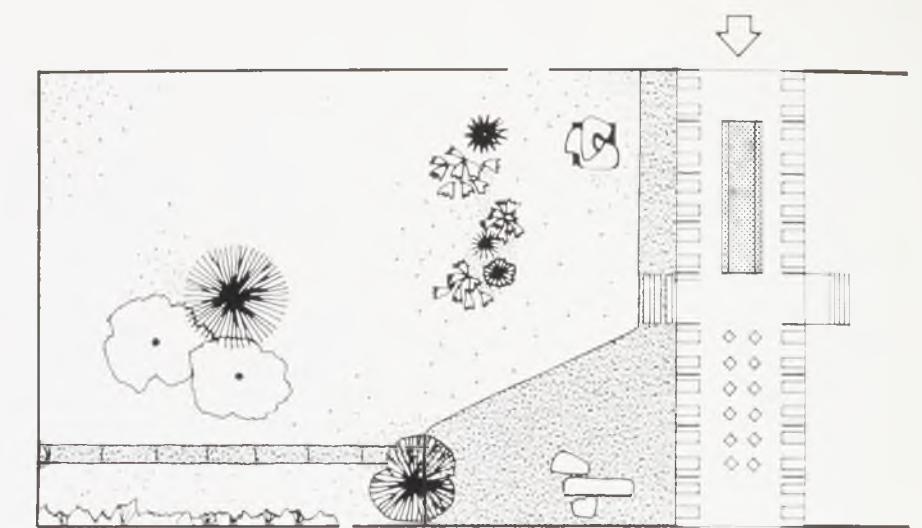
particularly as no catering establishments exist in the town within easy reach of the University precinct. The anticipated catering need is forecast on the accompanying diagram. Although, as has been remarked elsewhere, the need to build study-bedrooms will also become acute if student numbers grow, it seems certain that the catering requirement will be felt more strongly first. We therefore propose that the layout of the blocks of study-bedrooms should be planned at an early date and that, included amongst these, should be a series of free-standing dining units each consisting of, for example, two formal dining rooms for about 80 students each, one informal dining room for about 160 students, and a common room or ante-room. Once the layout has been agreed and assuming that the sites will be made available, these units could be built when needed to meet the catering requirements; the blocks of study-bedrooms could then be added gradually through the years (66a).



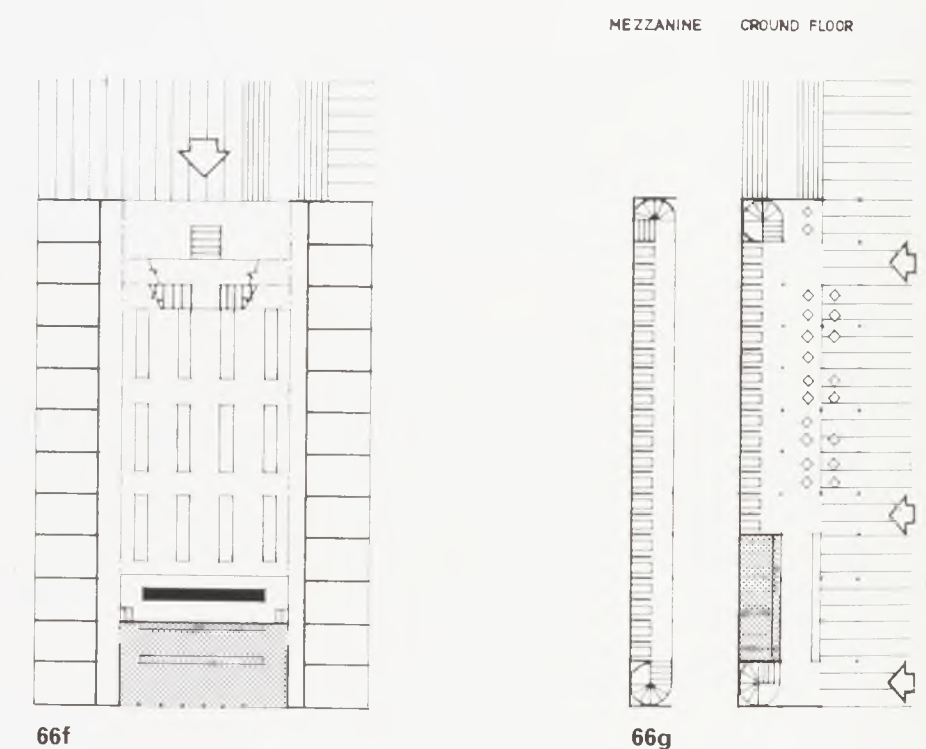
A Lodge for the Vice-Chancellor

- 3 It is only fitting, if the University precinct is to develop in the way envisaged, that it should include a Lodge for the Vice-Chancellor. This building, while it should be near to the heart of the layout, is a private residence requiring easy access yet some seclusion. It is desirable that the Lodge should be set apart from the main buildings so that this significant yet relatively small building is not over-shadowed by the bulk of the main University buildings.

We have considered many positions within the precinct for the siting of the Vice-Chancellor's Lodge but most of these were either inaccessible by road, liable to disturbance from neighbouring buildings or suffered from other disadvantages. The building proposed is designed within its own garden which is surrounded by an enclosing wall set amongst the boscage, planted adjacent to the new Woodhouse Lane; this position combines the advantages of proximity to the University, accessibility by road and to the Parkinson building and sylvan surroundings. The site proposed would, however, need to be negotiated with the City Authorities as – although it is an ideal position for the Vice-Chancellor's Lodge – it is within an area intended to be laid out as an open space.

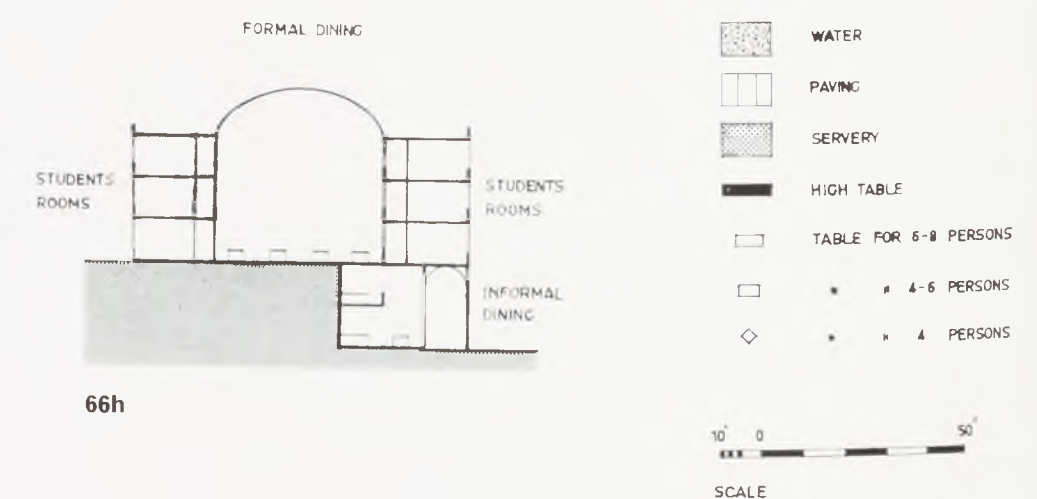


66e Plan of oblong Dining Hall with a walled garden.



66f

66g



66h

66f Plan of Dining Hall between two blocks of study-bedrooms (seating up to 300).

66g Plan of cafeteria overlooking court.

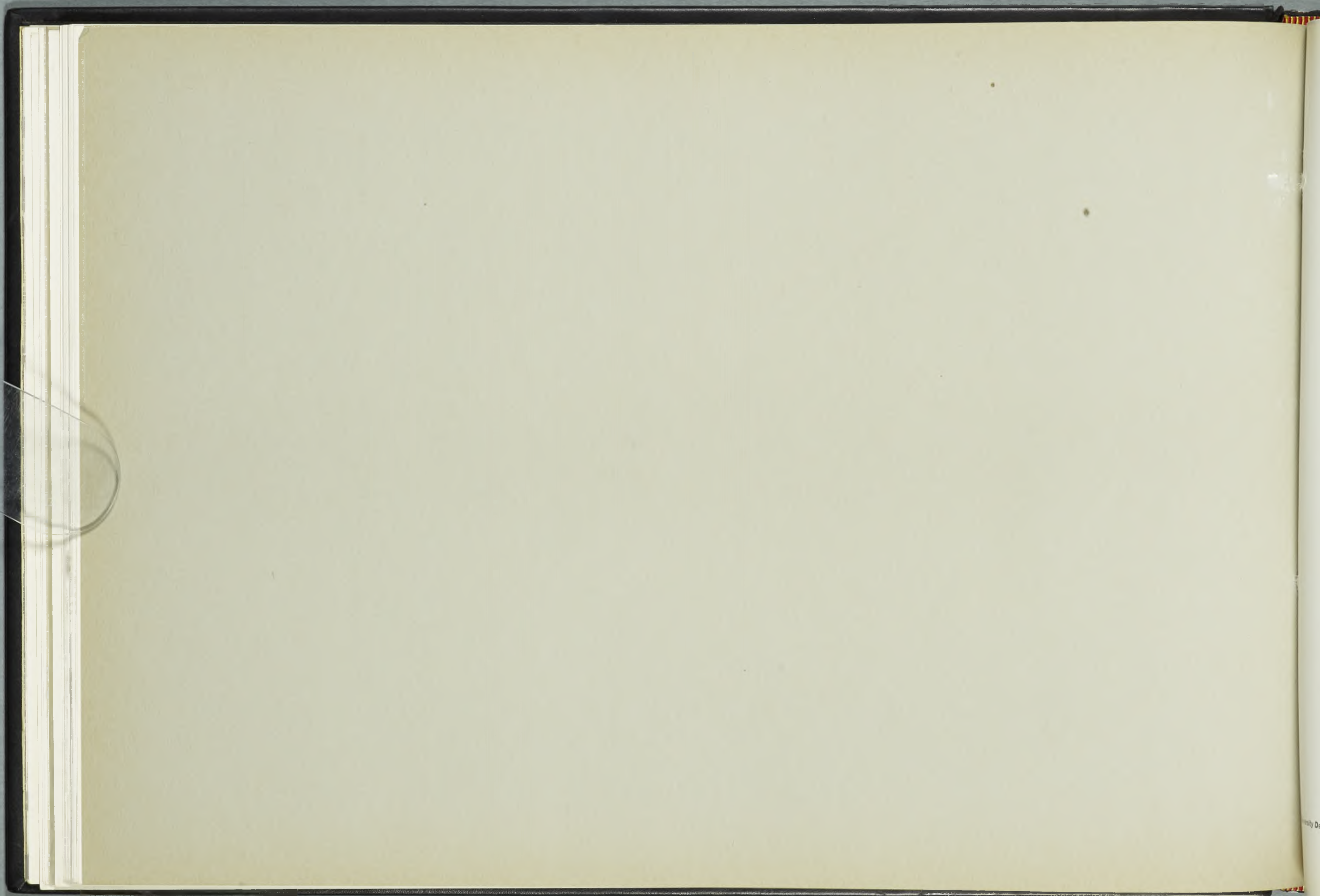
66h Section through Dining Hall between two blocks of study-bedrooms and cafeteria overlooking court.

66b Plan of round Dining Hall with internal patio.

66cd Plans of octagonal Dining Halls.

Section 3

Development plan





- BUILDINGS
- BUILDINGS OVER
- POSSIBLE FUTURE BUILDING EXTENSIONS
- PEDESTRIAN HARD SURFACES
- ROADS
- LANDSCAPING
- FORMAL GARDENS
- ORNAMENTAL POOLS
- STAIRS UP



68a The University Development Plan (keyed)

Keys to Development Plan 68a

Key arranged numerically

Buildings

- 1 Houldsworth School of Applied Science
- 2 Civil Engineering
- 3 Mechanical Engineering
- 4 Electrical Engineering
- 5 Boiler House
- 6 Mining
- 7 School of Chemistry
- 8 Parkinson Building
- 9 Brotherton Library
- 10 New Brotherton Bookstack, New Entrance to Brotherton Library
- 11 Great Hall
- 12 Textile Industries
- 13 Agriculture
- 14 Man-Made Fibres
- 15 University House and Union
- 16 Students Union Extension
- 17 Existing Department of Education
- 18 Arts Building
- 19 Economics, Social Studies, Law, History, Geography, Philosophy
- 20 Trinity Church
- 21 Christian Centre
- 22 Emmanuel Church
- 23 University Theatre
- 24 Concert Hall
- 25 Music Department, foyers and offices
- 26 Institute of Education, Adult Education and Extra-Mural Studies, Department of Education
- 27 Working Library and Reading Room
- 28 University Art Gallery
- 29 Physics
- 30 Research; Physics, Colour Chemistry and Leather
- 31 Colour Chemistry and Dyeing
- 32 Leather Industries
- 33 Married Students Flats
- 33A Site for more Married Students flats
- 34 Dining Hall
- 35 Physical Education Centre
- 36 Lecture theatres
- 37 Mathematics

- 38 Geology
- 38A Site for future extension if required
- 39 Senior Common Room
- 40 Botany
- 40A Site for future extension if required
- 41 Zoology
- 42 Psychology
- 43 Medical School
- 43A Site for future extension if required
- 44 Dental School
- 45 Existing Nurses hostel
- 46 Infirmary
- 47 Flexible Accommodation for Medical School
- 48 Hospital outpatients departments, operating theatres etc.
- 49 Hospital ward block
- 50 New Nurses Hostel
- 51 Dining Halls (1-7)
- 52 Blocks of Study-bedrooms (1-18)
- 53 Central Stores
- 54 Memorial chapel
- 55 Existing Lodge
- 56 Row of shops behind covered way
- 57 Officers Training Corps
- The Womens Royal Army Corps
- The University Air Squadron
- 58 Car parking under Physics Research
- 59 Car parking under Medical School
- 60 Car parking under Hospital
- 61 Car parking under Study-bedroom block
- 62 Car parking under Woodhouse Lane
- 63 Technical College
- 64 Student Health Service, facing across Medical court
- 65 Main Workshops
- 66 Vice-Chancellor's Lodge

Space between buildings

- 101 Fountain Court
- 102 Union Square
- 103 Main entrance Forecourt
- 104 Congregation Court
- 105 Mathematics Court
- 106 Physical Education campus
- 107 Medical Court
- 108 Staff Garden
- 109 Students Garden
- 110 The terraces
- 111 University Garden
- 112 Decorative pools
- 113 Small formal gardens
- 114 Boscage

Key arranged according to Faculties

Faculty of Arts

- 18 Greek Language and Literature
- 18 Latin Language and Literature
- 18 Semitic Languages and Literature
- 18 English Literature
- 18 English Language and Medieval English Literature
- 18 French Language and Literature
- 18 Italian Language and Literature
- 18 German Language and Literature
- 18 Russian Language and Literature
- 18 Spanish and Portuguese Languages and Literatures
- 19 History (Medieval)
- 19 History (Modern)
- 19 Philosophy
- 19 Geography
- 25 Music
- 18 Theology
- 26 Education
- 18 Phonetics
- 42 Psychology
- 28 Fine Art

Faculty of Economics and Social Studies

- 19 Economics and Commerce
- 19 Social Studies

Faculty of Law

- 19 Law

Faculty of Science

- 36, 37 Mathematics
- 37 Mathematics, Electronic Computing Laboratory
- 29 Physics
- 7 School of Chemistry
- 41 Zoology
- 40 Botany
- 38 Geology
- 40 Biomolecular Structure

Faculty of Technology

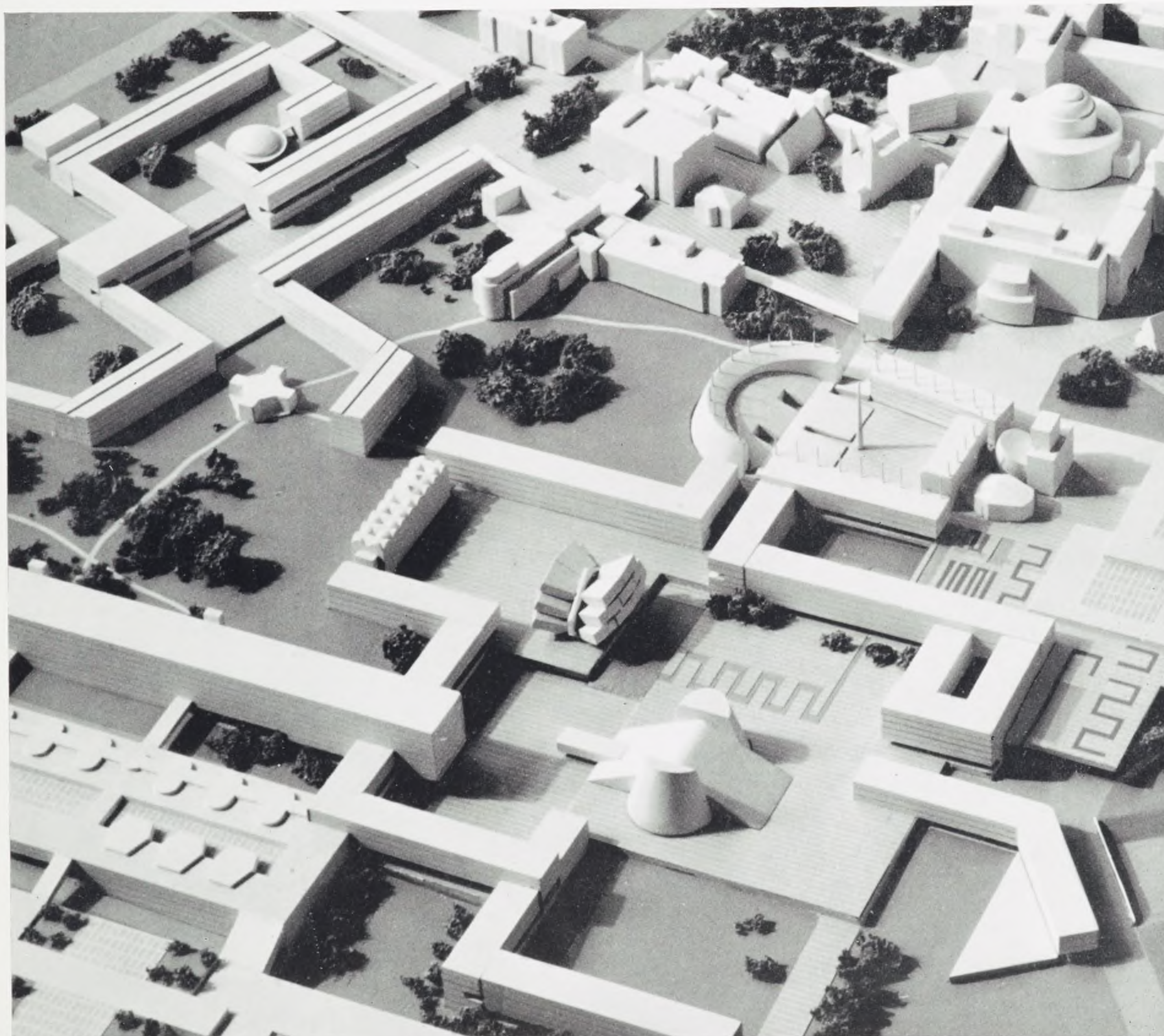
- 2 Civil Engineering
- 3 Mechanical Engineering
- 4 Electrical Engineering
- 6 Mining
- 1 Houldsworth School of Applied Science
- 12, 17 Textile Industries
- 31 Colour Chemistry and Dyeing
- 32 Leather Industries
- 13 Agriculture

Faculty of Medicine

- Anatomy
- Physiology
- Biochemistry
- Pharmacology
- Pathology
- Chemical Pathology
- Bacteriology
- Experimental Pathology and Cancer Research
- 43 Medicine
- Paediatrics and Child Health
- 47 Psychiatry
- Surgery
- Urological Surgery
- Anaesthetics
- Obstetrics and Gynaecology
- Radiology
- Medical Physics
- Preventive Medicine and Public Health
- Forensic Medicine
- 40 School of Dentistry

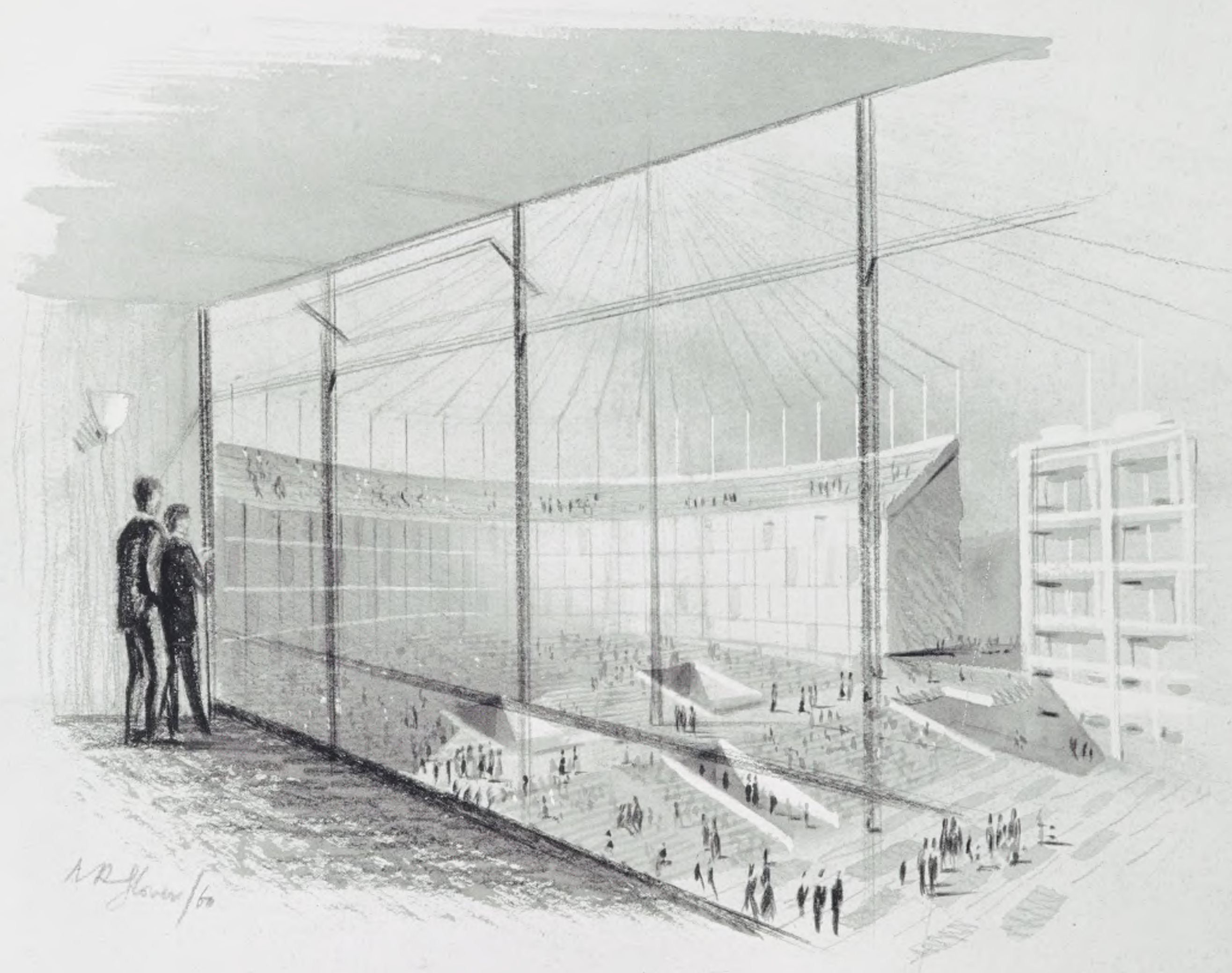
Other Departments

- 26 Institute of Education
- 26 Adult Education and Extra Mural Studies
- 10, 27 The Brotherton Library
- 64 The Student Health Service
- 35 Physical Education
- 8 Vice-Chancellor
- 8 Registrar
- 8 Bursar
- 8 Resident Architect and Planning Officer
- 8 Surveyor of the Fabric
- 8 The University Appointments Board
- 8 Photographer
- 8 The Tutor of Women Students
- 8 The Warden of Women Students in Lodgings
- 8 The Warden of Overseas Students
- 8 The Lodgings Warden
- 63 Officers Training Corps
- 63 The Womens Royal Army Corps
- 63 The University Air Squadron
- 39 Senior Common Room
- 15, 16 The Students Union



**70a Model of the University development plan
from the South East**

showing the grouping of the new buildings proposed
between the Parkinson Building and the Medical School.



71a Overlooking Congregation Court

from an upper floor of the Physics building; the Working Library in the background.

The Development Plan

Introduction

- 1 The principal considerations taken into account in the evolution of the preliminary development plan were (a) the general structure of the layout, (b) the form and character of the various buildings required, (c) the form and quality of the space between, and defined by, the buildings, and (d) the need to introduce what might be called 'controlled elasticity' in the layout in order to allow for the unforeseeable developments inherent in a growing university.
- 2 The existing layout of the University consists of a number of groups of buildings, planned and designed at different periods, on sites acquired as the need arose; because it has grown up near to the centre of the city, the University of Leeds did not start with a few buildings on a vast site large enough to accommodate any future development. One result of this series of additions is that the existing layout has little overall coherence. In order to introduce some order and clarity into the structure of the layout plan it is necessary to consider three aspects of the problem; firstly, what can be done to improve the existing development; secondly, how should the new and future development be planned; thirdly, how should the new and the old be integrated.

The existing layout, including the Yorkshire College buildings, the Parkinson buildings, the new technological buildings flanking Woodhouse Lane and the new buildings south of University Road.

- 3 In considering what might be done to improve the relationship between the several groups of existing buildings, which are so different in style and character, certain obvious weaknesses became apparent. Many of the buildings are unduly crowded together and some are uncomfortably restricted behind the great wall of the cemetery; there is an abrupt and jarring change in the axis of the layout of the post-war buildings next to Woodhouse Lane, as compared with the axis of the main Parkinson buildings; the way in which the old Gothic revival Yorkshire College buildings on the north side of University Road bite into the symmetrical layout of the neo-Classic Parkinson group is also disturbing.

Some pruning

- 4 The over-crowding of buildings can be greatly ameliorated by judicious pruning and this can be justified by the opportunity which it affords to add much-needed extensions to certain departments, and to provide new buildings for others at present housed in very obsolete accommodation. The removal of the old buildings which house the departments of Leather and Colour Chemistry would make it possible to plan an extension of the Brotherton bookstack and a new, more generally convenient,

entrance to the Library: the demolition of the eastern wall of the cemetery would allow this most important centre of university life – which at present has an atmosphere of 'back-land' development – to be opened out towards the new University garden planned over the old burial ground. The demolition of the wing of the Yorkshire College buildings south of the Brotherton Library (at present housing the Civil Engineering department which is to move into the new buildings now nearing completion, and the Botany and Zoology departments which deserve more up-to-date accommodation) will make it possible to create an entrance court to the Parkinson building south of the Library rotunda. By closing this court on the west by the introduction of a new block of building – neutral in style and raised on a colonnade providing a covered way linking the new development planned to the south with the new entrance to the Brotherton in the north – the existing collision between the styles of the Parkinson building and the Yorkshire College can be resolved. Although this proposal involves the loss of some of the earliest parts of the University buildings, the most pleasant of old Yorkshire College buildings including the existing Great Hall would be retained in a much improved setting.

- 5 The ultimate demolition of the old Fuel building (soon to be vacated by the Department when it moves to its new premises), of the redundant small boiler house No. 2, of the Geography building (which, though just adequate in the accommodation it provides, is extremely undistinguished as a building and blocks an obvious way into the garden, intended to be planned over the cemetery, which would lead from the Union and University House, the centre of student life) together with the demolition of most of the rest of the cemetery wall, will all contribute to the decongestion of the existing buildings. It will also very greatly simplify circulation between the various parts of the University.
- 6 The removal of the old Fuel building, already referred to, and the removal of the adjacent corner of the cemetery wall, will introduce some space between the changing axes of the Mining building and the new central boiler house; this clearing of the ground will make it possible to employ paving and planting in order to camouflage this awkward directional change in the layout of the existing buildings. The bend introduced in the plan of the long terrace of study-bedrooms planned at the west end of the cemetery is designed to surmount the difficulty of relating the axis of the technology group of buildings, which culminates in the new Houldsworth School at the corner of Reservoir Street, with the axis of the existing buildings flanking University Road and the new blocks of study-bedrooms planned adjacent to Clarendon Road.

New development layout south of University Road

- 7 Before approaching the problems involved in preparing a layout plan for the future development of new buildings for the University we stressed that it was necessary to anticipate the nature of the problems



73a Some of the mature trees on the University site



73b Passing from one court to another

involved, both in their broad implications and in their detailed requirements. This led us to make a forecast not only of the space likely to be required by the various departments but also of the actual type of accommodation which would probably be needed; this enabled us to envisage certain different forms – some repetitive, others not – which seemed to be appropriate for the new buildings. These have all been referred to previously and, broadly speaking, fall into three categories:

- (a) finite buildings designed to serve unchanging purposes such as the Senior Common Room, the Working Library, the University Theatre and Concert Hall, the Mathematics Lecture Rooms, the Physical Education Centre and the Dining Halls associated with the blocks of study-bedrooms.
- (b) nearly finite, repetitive buildings designed to provide a fairly constant type of accommodation to meet the demands of departments which may, nevertheless, expand or contract in size through the years such as the rooms and undergraduate laboratories required by, for example, the departments of Physics, Geology, Biology, Law, Economics, Social Science, etc.
- (c) very flexible buildings designed to meet urgent needs which are likely to change within a short time such as research laboratories and workshops which are required by the department of Physics, Leather and Colour Chemistry, and the bookstack of the Brotherton Library.

- 1 The layout proposed is designed to exploit the different characteristics of these three types of building. Varying degrees of expansion are allowed for to meet unforeseeable developments. The finite buildings are designed as complete in themselves with no provision for enlargement; many of the multi-storey blocks are laid out in such a way that extra wings can if the need arises, be added in the future; the flexible single-storey buildings are located adjacent to their parent departments in parts of the site where there is plenty of room to spread.

Significant influences in the new layout

- 2 The assembly of these various building elements into a coherent group with a recognisable structure of its own was, nevertheless, much conditioned by (a) the nature, form and position of the existing dominant core of the University, (b) the site which is to become available, and (c) its relationship to the City centre and the Infirmary (to which the new Medical School, as has been emphasised, is inescapably linked). Although the methods used to analyse the problems involved leading to conclusions about the type and form of the building required are, strictly speaking, most obviously appropriate to analysis of the design of a new university where the inhibitions of existing development do not exist they were, nevertheless, of significant value in the evolution of the layout proposals for the future developments in Leeds.

- 1 There were three principal factors which influenced our layout proposals arising out of the existing situation. The first was a recognition of the domination of the University by the Parkinson building, surmounted by its tower; secondly the quite considerable distance between the present centre of the University and the Infirmary; thirdly, the relationship which should be created between the new blocks of study-bedrooms within the precinct and the rest of the University.

Height of buildings

- 2 We feel that the Parkinson building, sited almost on top of the hill, should remain the dominant element and that new building should not compete with this, particularly in height; therefore the multi-storey buildings have, for the most part, been limited in height to about four storeys.

Terracing the hillside

- 3 In order to minimise the experience of distance between the Parkinson building and the Infirmary to those who will daily pass between these buildings (in the uphill direction at least, this sense of distance is not inconsiderable) we regard it as important to avoid monotony or too long vistas and to create instead as much variety of spatial experience as would be consistent with order and convenience in use. The form of the several open spaces through which it is necessary to pass between the south-eastern extremity of the site and the Brotherton Library is therefore varied and punctuated with distinctive landmarks; the considerable slope in the ground is exploited by the introduction of a range of terraced levels separated by flights of steps so that a certain rhythm is introduced between the horizontal movement of walking and climbing or descending the hill. For example, someone leaving the new entrance to the Brotherton and intent on going to the new Physical Education Centre, would walk between colonnades along the broad covered path under the new building separating the Parkinson building from the old Great Hall; on his right he would be able to see into the new University garden and on his left he could look across the Fountain Court. Descending gradually down this path he would pass the court north of the Union and east of the Man-made Fibres building, and the forecourt south of the new Arts wing, before descending to the large court intended for University Congregation characterized by the crescent-shaped working Library, the terraced seating over the Art Gallery, the foyer of the University Theatre and the velarium mast. Descending steps within the narrow space between the Physics and Mathematics departments he would reach, on a lower terrace level, the court terminated in the west by the Senior Common Room and containing the distinctive form of the building comprising the Mathematics lecture rooms. Passing under this latter building he could go down a staircase cut into the terrace which



74a Terraces and steps

75a Provision for car-parking in the neighbourhood

There are five principal car-parking areas proposed on the perimeter of the site.

1. Adjacent to the proposed new Hospital.
2. Adjacent to the new Medical School.
3. Adjacent to the main entrance to the precinct, the Parkinson Building, the Institute of Education, the Theatre and Concert Hall, etc.
4. Adjacent to the Faculty of Technology.
5. Adjacent to the blocks of study-bedrooms.

These five zones could accommodate about 3,500 parked cars. If it is decided that even more car-parking provision should be allowed for than is anticipated in these proposals, second levels of parking could be planned, or parking could be extended under the improved Woodhouse Lane when this is built.

74b Paving details

illustrating the value of stone setts, cobbles and paving stones.





would lead, via a short, enclosing tunnel, into the great campus surrounded by low buildings and dominated by the Physical Education Centre and, towering above, the east end of the ward block of the new hospital (73b, 74a).

Students in residence

- 1 The University is essentially a seat of learning; therefore the academic buildings should dominate the layout. For this reason it was decided that – despite the relatively high density of development necessary – the blocks of study-bedrooms should be restricted in height in order to be subordinate to the other buildings within the precinct. (There are, of course, other advantages which accrue from restricting the height of these residential blocks; the scale can be maintained at a domestic level yet the blocks can be planned in long terraces to define the space enclosed in many varied ways; if all rooms are accessible by staircase the social grouping which naturally ensues is a welcome one; where no lifts are necessary, breakdowns and bottlenecks in the circulation are avoided and convenient contact with the ground is retained.)

Structure of the layout plan

- 2 The general structure of the layout of the development plan is based broadly upon the framework consisting of the series of terraced courts linking the circulation route between the Brotherton Library and the new Medical Centre, the group of buildings containing the study-bedrooms planned along Reservoir Street and Clarendon Road, the ward block of the proposed new hospital building which links the residential development in the west with the new academic buildings in the east, and the series of linked spaces introduced by the demolition of some buildings, the modification of others, and the building of new ones on the east to west circulation route which passes through the centre of the University precinct – more or less on the line of University Road.

Movement about the site

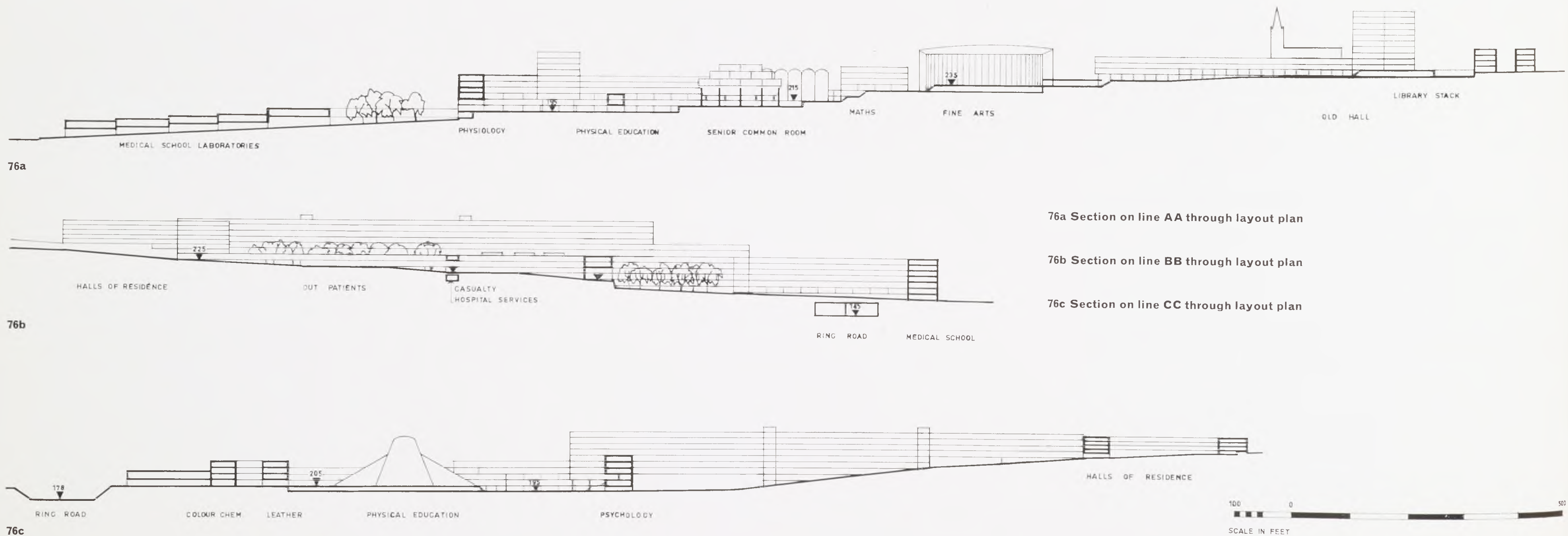
- 3 The principles governing circulation about the University and the reasons for creating a pedestrian precinct have been described already. For such a precinct to be successful – and therefore to be appreciated by those who use it – great attention must be paid to detail in order to ensure that, firstly, it functions properly and, secondly, that what one sees when walking about is worth looking at. The workability of a precinct depends upon sufficient thought being given to the servicing of buildings particularly with regard to making adequate provision for the delivery of equipment, adequate provision for storage of this within the buildings and convenient arrangements for the removal of refuse and waste; if the light delivery trolleys suggested are adopted, appropriate ramps must be introduced where the levels change in the paved courts.

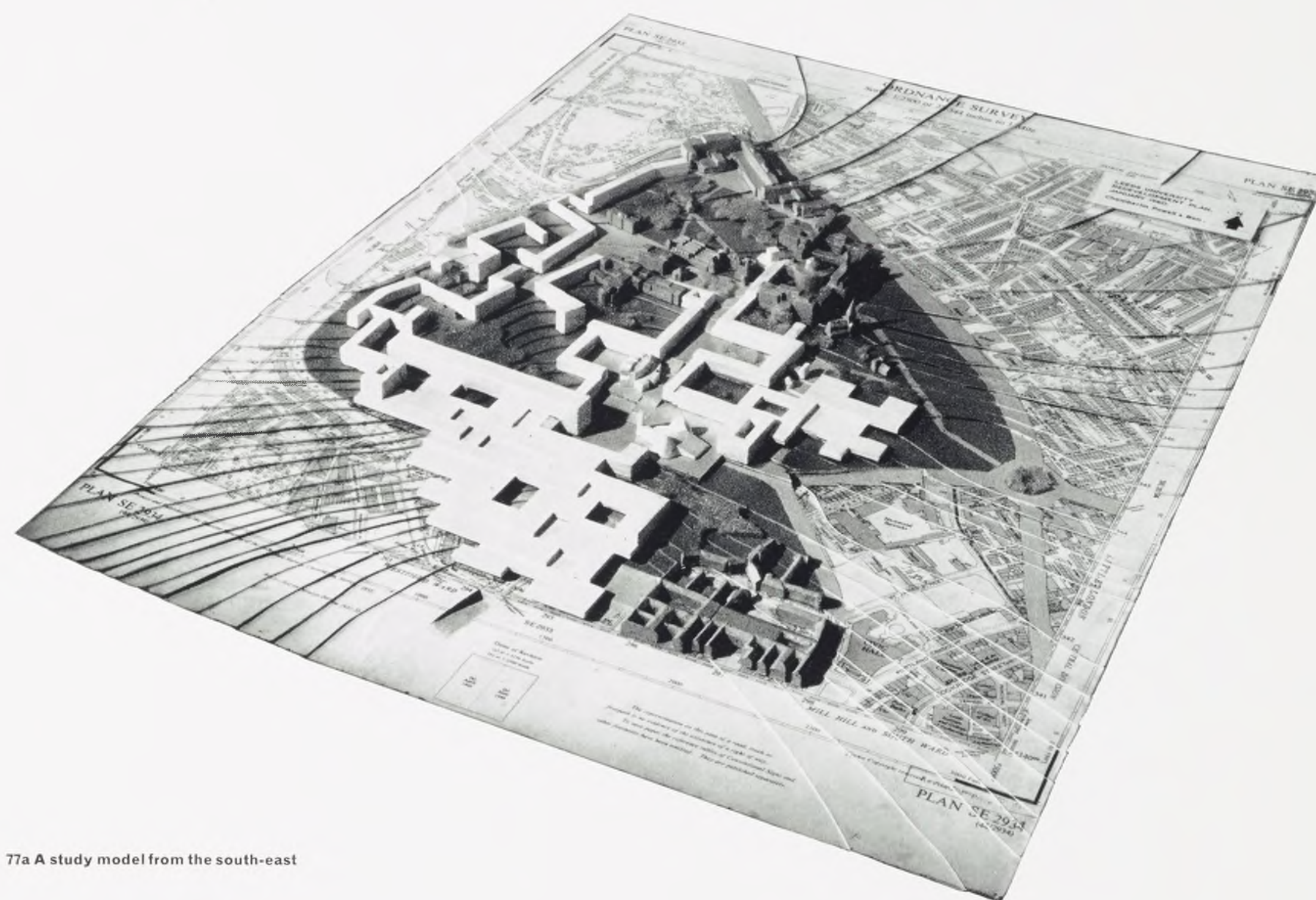
1 Balance between order and variety in form can best be obtained by limiting the vocabulary in the architecture of the new buildings, by aiming at clarity of form and by using materials which will provide their own textural richness. In this connection we consider it most important to retain much of the material at present on the site in the form of walls, buildings and pavings, rather than to sweep them all away. The stones in the walls of the cemetery, the stone setts which pave many of the streets and the flagstone pavings can be made use of for the new retaining walls needed, for the new paved areas and for aggregate which could be exposed in some of the new concrete structures. If large areas of the site are cleared in anticipation of rebuilding – which may take some time to complete – these quantities of salvaged materials may be temporarily piled up, in geometrical shapes, and either left as they are until needed or, if preferred, they can be covered with turf-like giant potato clamps. For it is highly desirable that the precinct should

become agreeable to look at as the development plan is realised and not appear unkempt until some distant moment in the future when, it is hoped, all the buildings will be finished. Sir Hugh Casson has propagated on many occasions the excellent idea of planting trees in positions where the mass of a building is required in the general composition (buildings which will not, however, materialise for some time) on the grounds that trees thus planted serve a visual purpose at low cost and can be easily removed when the time comes to build. Apart from this expediency, it is very desirable to preserve any existing trees which do not unduly inhibit the new layout and to plant new ones (or sometimes transplant part-grown trees) for retention as permanent features of the landscape of the precinct (74b, 73a).

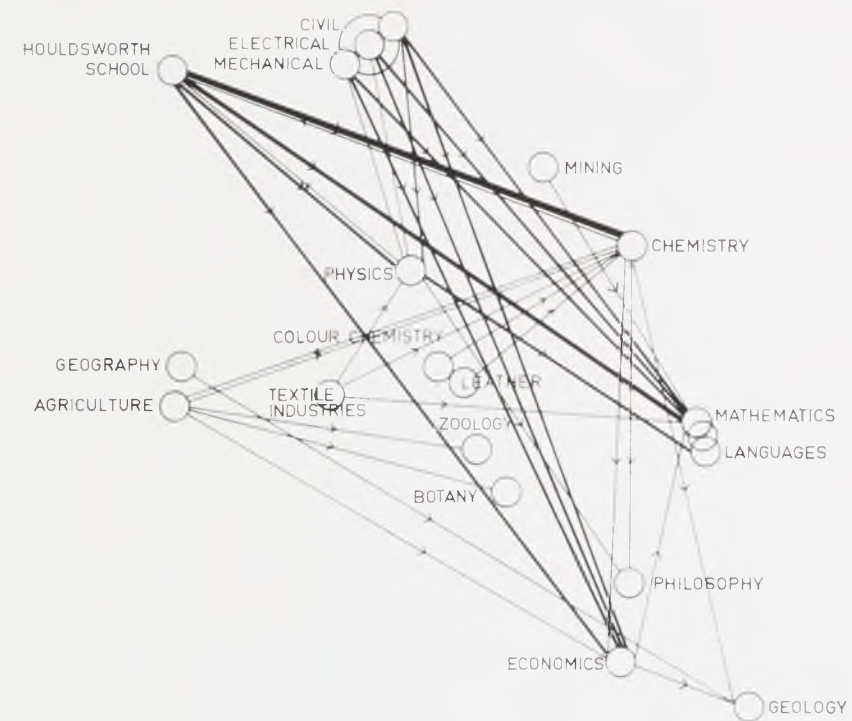
2 An important factor in developing the layout plan for the new buildings has been concerned with grouping these to echo the urgency of need

arising out of the building programme. It is most desirable to complete, as nearly concurrently as possible, groups of buildings which embrace a particular open space rather than to start the erection of buildings in a haphazard way on widely separated sites. For this reason, the most urgently needed buildings comprising the Mathematics department, the first stage of the Physics department, the departments of Geology and Zoology, and the Senior Common Room have been planned on land which is soon to be cleared and thus will be available for the new buildings. From this nucleus, further stages of the Physics department to the north and south can be undertaken as well as the working Library, the Physical Education Centre and other departments which could follow as indicated in the section of this report concerned with the building programme. This will ensure a coherence during the stages of growth in the new building development as well as completeness when all is built (78a-c, 79a-c, 80a-c, 81a-c).





77a A study model from the south-east



78a Relationship diagram No. 1

The teaching relationship between departments in different Faculties, shown diagrammatically: 1958.



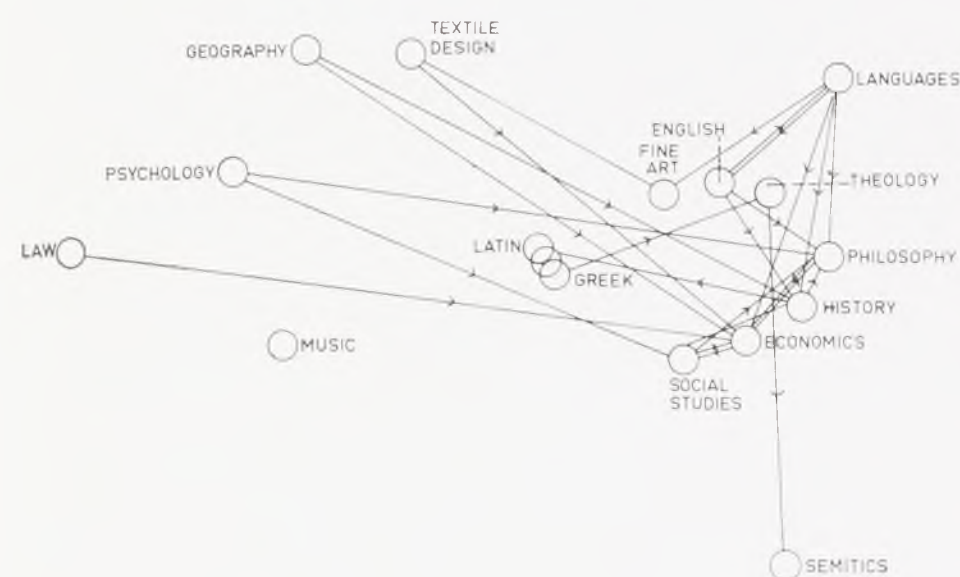
78b Relationship diagram No. 2

The teaching relationship between departments in different Faculties, shown diagrammatically: 1970.



78c Relationship diagram No. 3

The teaching relationship between departments in different Faculties, showing pedestrian routes: 1970.



79a Relationship diagram No. 4

The teaching relationship between departments in the Faculties of Arts, Economic and Social Studies, and Law, shown diagrammatically: 1958



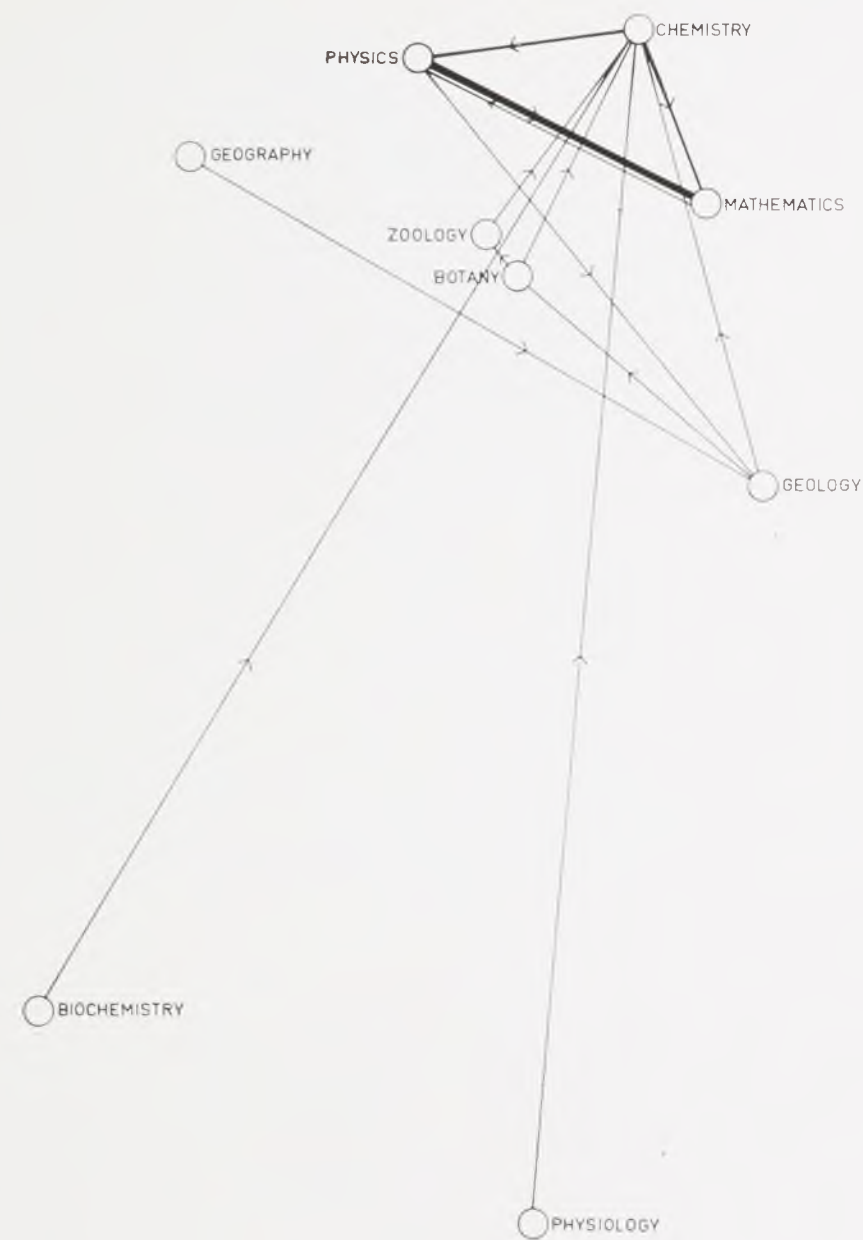
79b Relationship diagram No. 5

The teaching relationship between departments in the Faculties of Arts, Economic and Social Studies, and Law, shown diagrammatically: 1970.

79c Relationship diagram No. 6

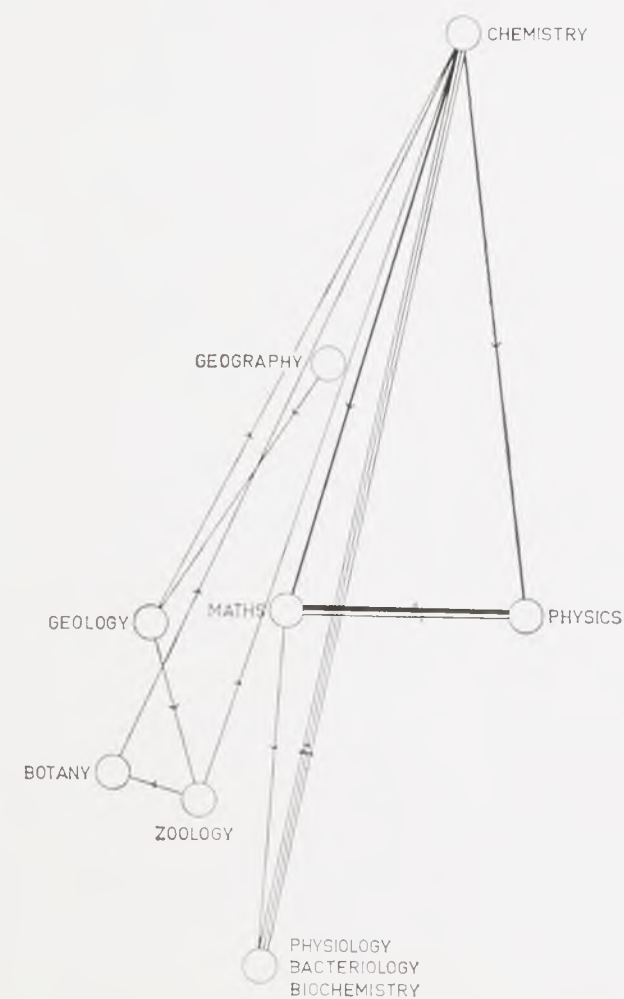
The teaching relationship between departments in the Faculties of Art, Economic and Social Studies, and Law, showing pedestrian routes: 1970.





80a Relationship diagram No. 7

The teaching relationship between departments in the Faculty of Science shown diagrammatically: 1958.



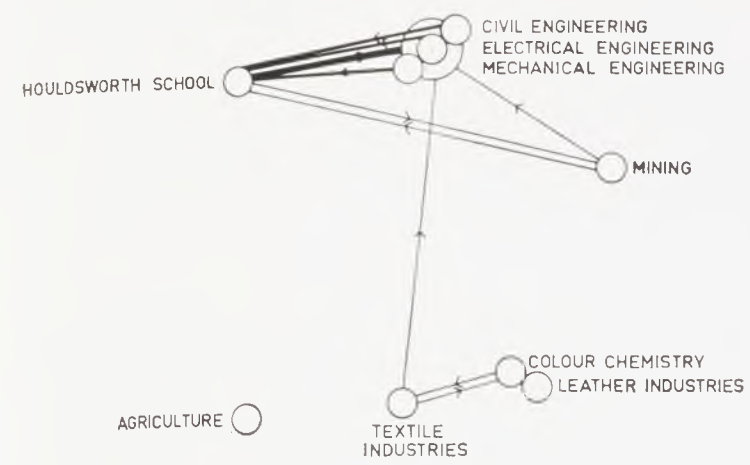
80b Relationship diagram No. 8

The teaching relationship between departments in the Faculty of Science, shown diagrammatically: 1970.



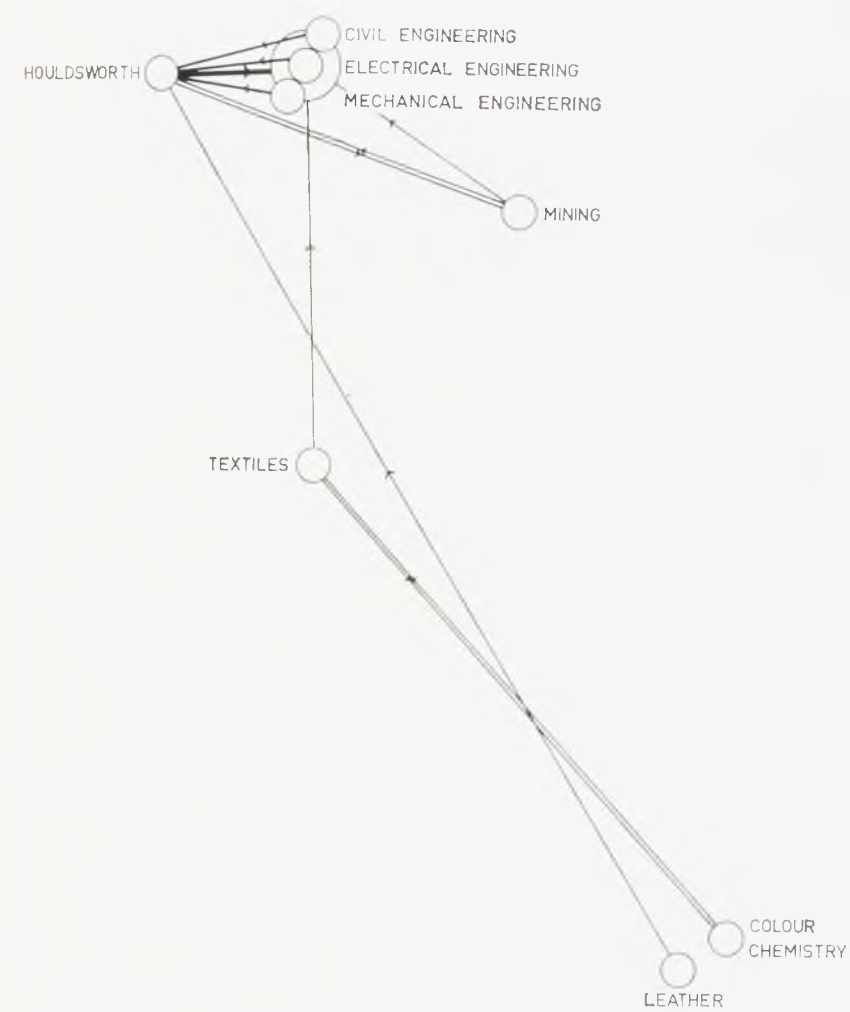
80c Relationship diagram No. 9

The teaching relationship between departments in the Faculty of Science, showing pedestrian routes: 1970.



81a Relationship diagram No. 10

The teaching relationship between departments in the Faculty of Technology, shown diagrammatically: 1958.



81b Relationship diagram No. 11

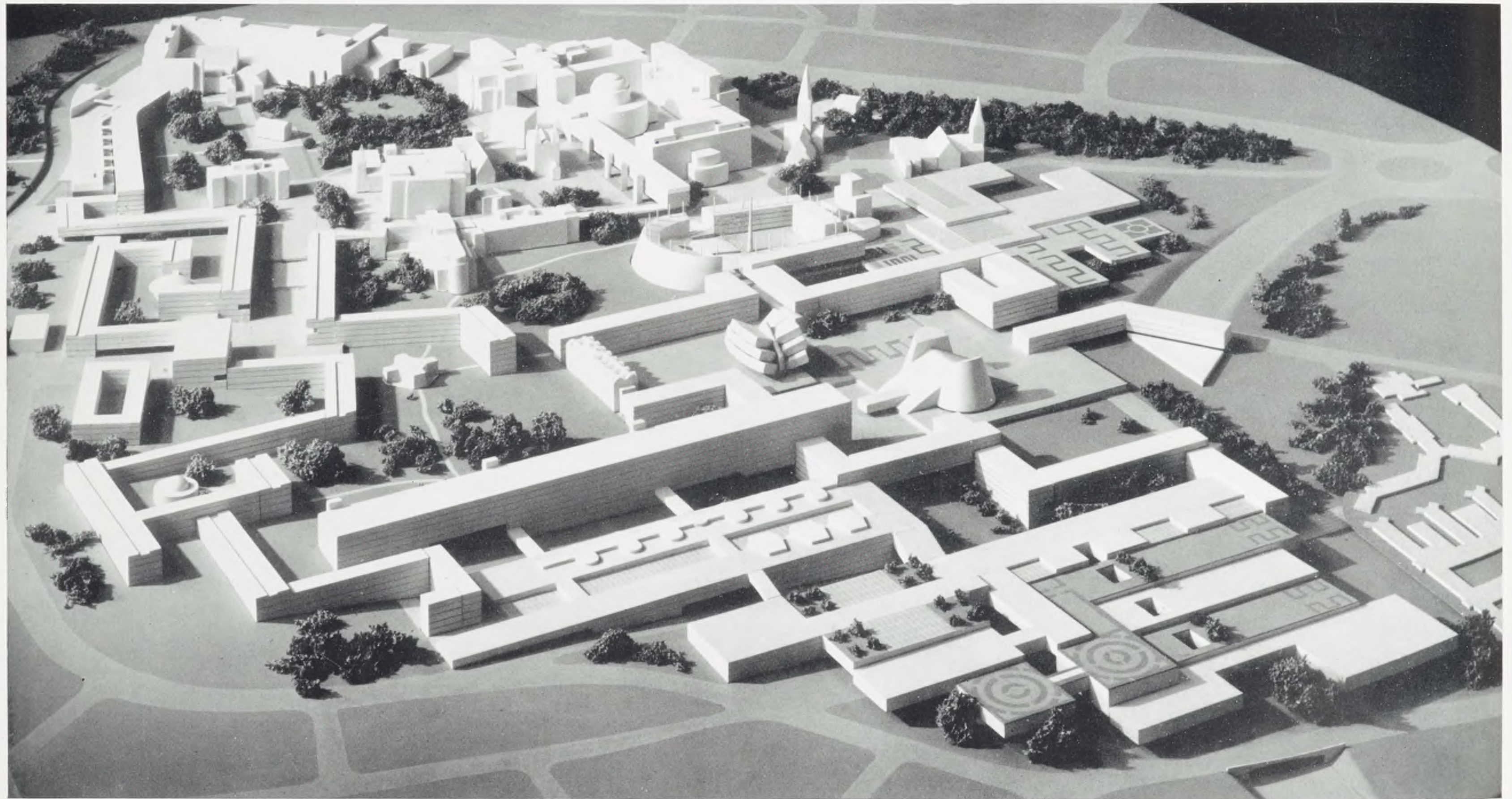
The teaching relationship between departments in the Faculty of Technology, shown diagrammatically: 1970.

81c Relationship diagram No. 12

The teaching relationship between departments in the Faculty of Technology, showing pedestrian routes: 1970.



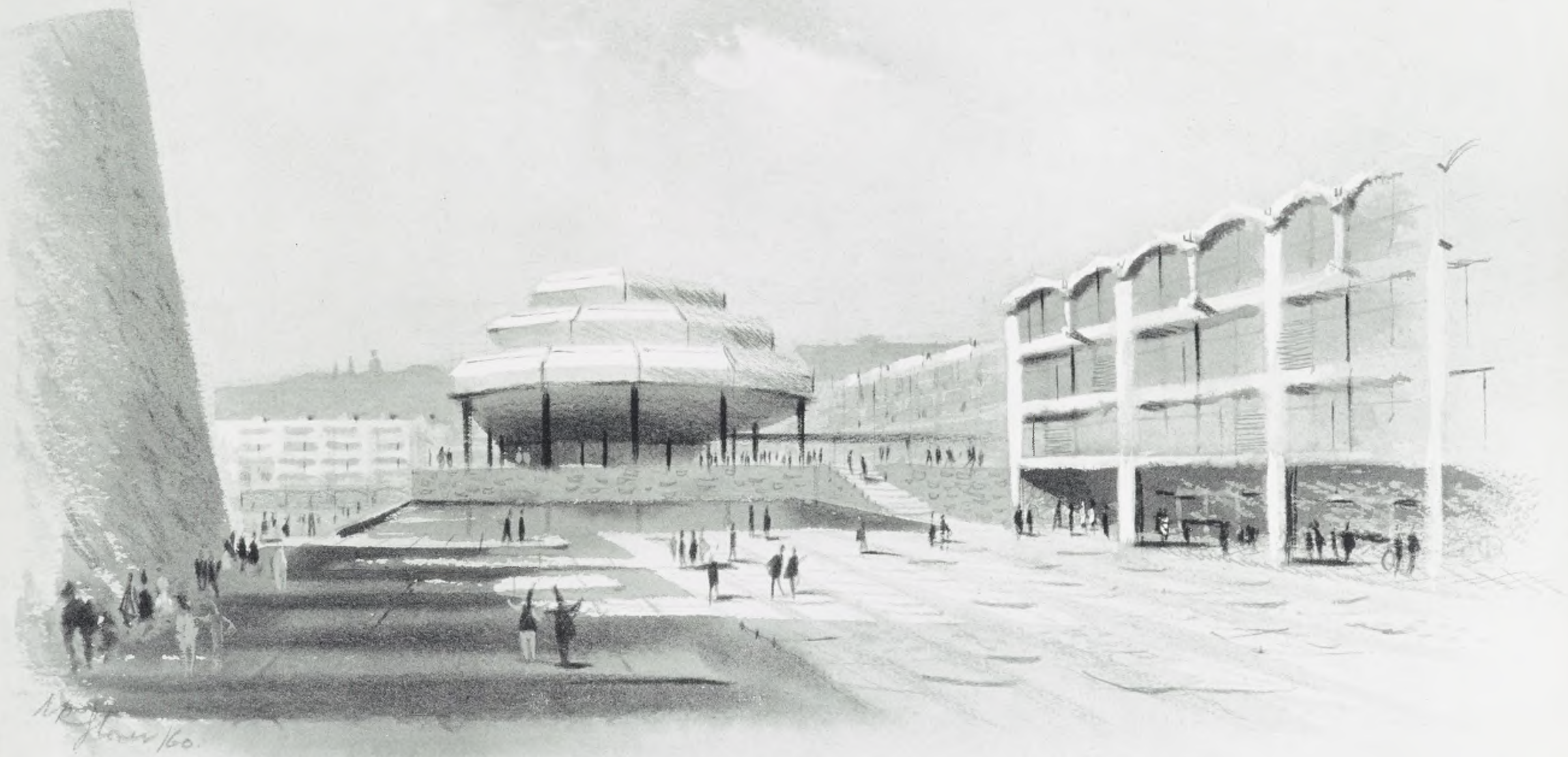
82a Model of the University development plan from the south
showing the proposed new Hospital and Medical School in the foreground.



83a Looking across the Mathematics Court
towards the Senior Common Room



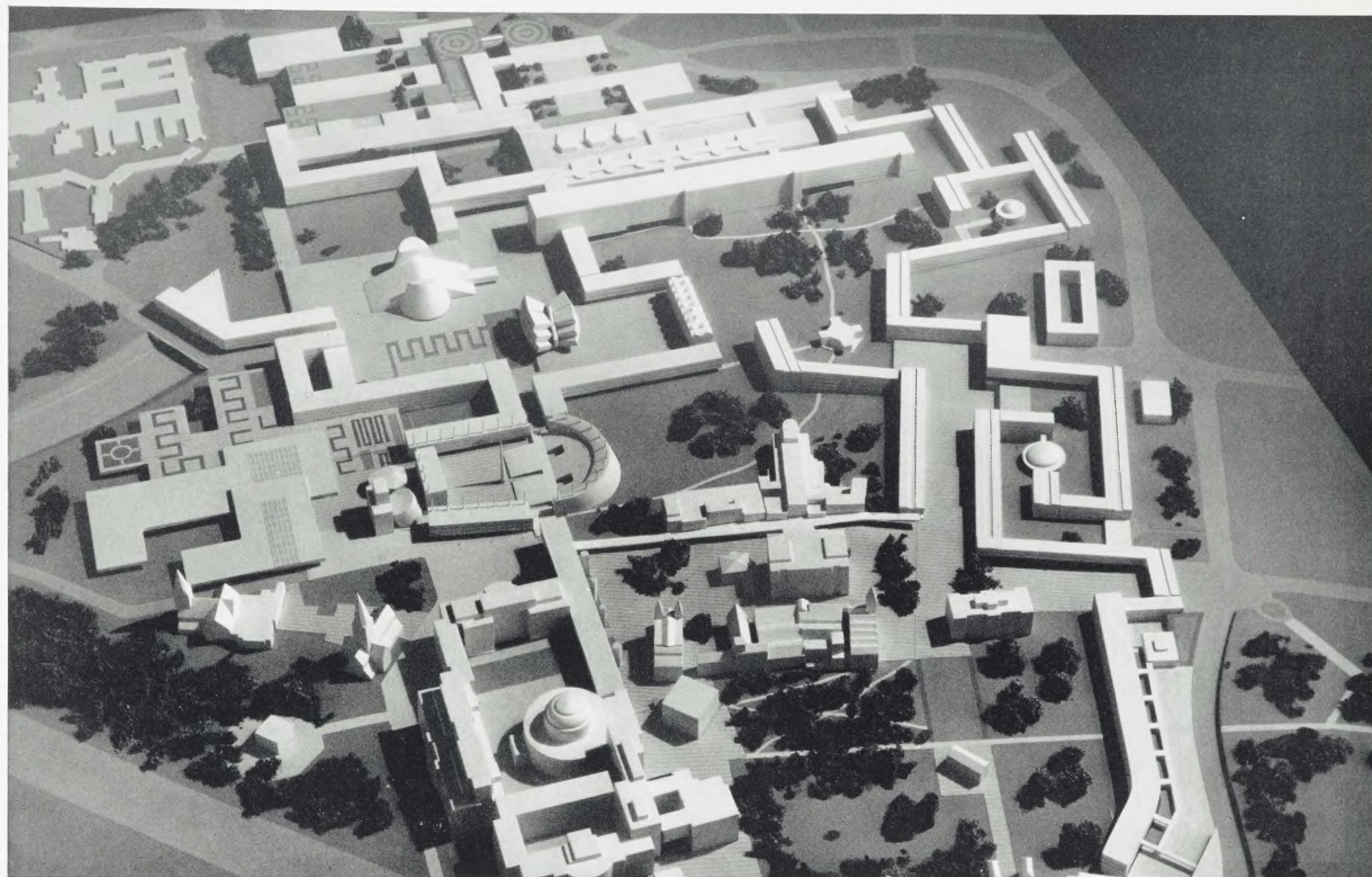
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84a Looking across the campus

towards the block of Mathematics lecture rooms; to the left is the north end of the Physical Education Centre.



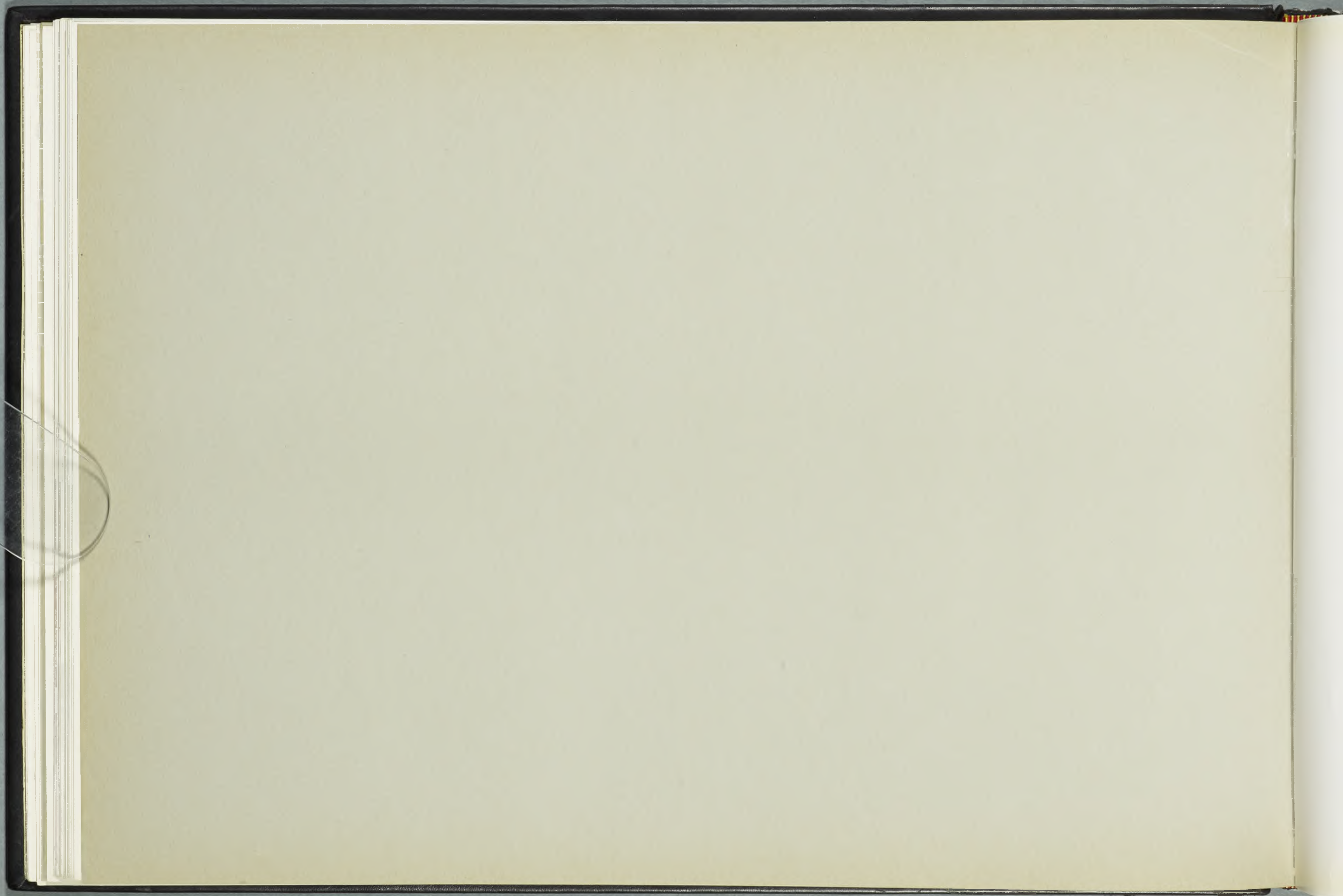
85a Model of the University development plan from the north

showing the old Woodhouse cemetery, laid out as a garden, in the bottom right hand corner.



Section 4

Estimates of cost and timing



Estimates of cost and timing

Introduction

1 The first part of this report sought to establish what type and quantity of accommodation would be needed in order to meet the manifold needs of the University if the student population were to grow to a total of about 7,000 by 1970. The layout plan indicates how this need for accommodation might be translated into buildings disposed about the site which is already – or could be made – available. It is now necessary to include preliminary estimates of the cost of the works involved and to propose a building programme which would illustrate when it will be necessary to start work on site and to incur certain expenditure if the buildings are to be ready when they will be needed.

Estimates of cost

2 The preliminary estimates of cost (which are based on present day prices) must only be regarded as approximate at this stage and subject to revision where necessary to accord with any modifications which may be called for in the Schedules of Accommodation. The estimates should allow for:

- (a) The cost of alterations and modifications to existing buildings.
- (b) The cost of demolition, site clearance, the closing or diversion of existing roads, public utility services, etc.
- (c) The construction of new buildings both academic and residential.
- (d) The development of the site including the layout of new roads, paths, paved and planted areas, retaining walls, public utility services, etc.
- (e) The cost of providing garaging and parking areas for cars.

3 Regarding (a) many of the modifications to existing buildings are already planned and as their cost is not substantial when considered as part of the whole, no detailed new assessments have been made of these items.

4 Regarding (b) and (d) these items of expenditure are as inevitable a part of the cost of redevelopment in a built-up area as is the cost of the site itself and they should therefore be considered separately from the cost of providing whatever actual buildings are needed; they cannot be estimated in any detail at this stage and cost will vary considerably in different parts of the site. It is, therefore, advisable to consider the costs associated with site clearance and general redevelopment as items of expenditure to be included in a 'site acquisition and development' account rather than attribute this necessary expenditure to the cost of individual academic or residential buildings and their particular external works, since it is impossible to apportion equitably these charges arising out of the nature of the site to each of a number of departmental or other buildings. Nor does it necessarily follow in comprehensive redevelopments that general site works can be carried out concurrently with, and in proportionate value to, the new buildings.

5 Regarding (c) the estimates of cost of the new building works have been prepared in the light of the average current costs of university buildings allowing for the assumed nature of the sub-soil and the problems inherent in the site, such as the need to build on a slope and to found, in many cases, below existing basement levels.

6 Regarding (e), the cost of providing garages and parking places for cars has been separately estimated since it may be felt that the cost of this on the scale envisaged as being necessary should, strictly speaking, be borne by car-owners. To what extent this expenditure may in fact have to be carried by the estate owning and providing the parking area – in this case the University – or by the local authority where roads are thus kept free for the flow of traffic – in this case the City – or by the Exchequer since, in a sense, motoring is now a public service, or by some other authority – is a matter of public policy which will have to be decided in the near future – not only in the context of the University of Leeds but in other situations throughout the country where, if the stationary car is not provided for, it may well strangle urban living.

Building programmes

- 1 The considerable increase in accommodation required to house 7,000 students by 1970 concerns nearly all departments because of the increase in 'special studies' students as well as the greater amount of service teaching to attendant students which will be required of most departments. This departmental interdependence implies that it will only be possible to accommodate the full number of students with confidence if all the major projects are completed and ready for occupation by 1970, the date for which the Forecast Schedules of Accommodation have been prepared; it is clear from a study of the evidence included in the first section of this report that as much as possible of the new building should be available by 1965 – particularly in view of the increased demand for university places resulting from the birth-rate 'bulge'. Yet it is virtually impossible for all the buildings likely to be needed by 1965 to be built because of the time needed to plan these in detail, because there is a practicable limit to the rate and quantity of building which can be efficiently and economically undertaken within a given time, and because finance for university building is usually made available only in limited annual sums rather than in the quantity required specifically to meet a need planned in time as well as in volume. For this reason, two alternative building programmes have been prepared.
- 2 The first programme, 'A', might be described as representing as nearly an ideal programme as it seems possible to forecast if the increase in student numbers foreseen in this report is to be reasonably adequately accommodated by 1970. It allows for the building of nearly all the accommodation foreseen to be required to meet both the academic and residential needs (because of the long time needed to plan and to build the Medical School – which should ideally progress in step with the new teaching hospital proposed – this would not be completed until 1974). This programme does not, however, keep pace with the demand for accommodation foreseen by 1965 — let alone cater for the pressure

caused by the 'bulge'. It is, nevertheless, a practicable compromise aimed at meeting the foreseeable requirements as well as possible (90a, 89a–j).

- 3 The second programme 'B' is based on the assumption that only a limited amount of finance might be available annually which should be allocated to the most immediate priorities in the way of accommodation. If this limited rate of investment is adhered to, and if the University still plans to expand to a figure of 7,000 students by 1970, there will inevitably be severe overcrowding in the academic departments, far too small a proportion of the students will have study-bedrooms (it should be remembered that lodgings in the City will either not exist or will be inadequate), no provision will be made for the birth-rate 'bulge' and it may take nearly an extra decade to catch up on the 1970 requirements (91a).

Conclusion

- 4 These exercises in trying to forecast a building programme underline how important it is to recognise that the realism of any scheme for the expansion of a large and complex institution – however acute the need which gives rise to this growth – depends on the fulfilment of several conditions including the following: (1) the ability to obtain the site when required; (2) the availability of financial resources as required; (3) sufficient time to draw up the detailed requirements and to plan the buildings; (4) sufficient time and resources available in terms of material, labour and plant to put up the buildings when needed. If these conditions are not met the intention of the scheme cannot be properly fulfilled.



1963



1964



1965



1966



1967

89a-j The phasing of building programme 'A'

Each drawing shows, hatched in solid black, the buildings which could be completed and occupied during a particular year. The proposed new Hospital and Medical Centre is shown hatched with open lines. The individual buildings may be identified by reference to the layout drawing of the University Development Plan (30a).



1968



1969



1970



1972



All buildings complete

90a Programme 'A' of major buildings and site development

[illegible]

91a Programme 'B' of major buildings and site development

Name of Department	Nett area sq. ft.	Plus, Circ. etc. sq. ft.	Gross area sq. ft.	Ap- prox. Cost/ sq. ft.	Estimated Cost £	60	61	62	63	64	65	66	67	68	69	70	71	72	73
Academic Departments																			
Arts	Stage 3				337,000														
Mathematics		33,600	12,100	45,700	105/-	240,000													
Physics	Stage 1																		
	2	100,240	60,144	160,384	125/-	1,002,400													
	3																		
Geology		36,230	21,800	58,030	125/-	362,700													
Botany (incl. Biomolecular Structure)		34,200	20,600	54,800	125/-	342,500													
Medical and Dental Schools	Stage 1																		
	2	433,255	158,045	591,300	130/-	3,843,500													
	3																		
	4																		
Houldsworth School Extension		22,300	13,400	35,700	140/-	250,000													
History																			
Philosophy																			
Geography		30,000	10,600	40,600	105/-	213,200													
Fine Arts																			
Economic and Social Studies and Law		40,045	14,436	54,481	105/-	281,700													
Zoology		30,400	18,200	48,600	125/-	303,800													
Mathematics Electronic Computing Lab.		9,700	3,500	13,200	125/-	82,500													
Education		10,800	3,890	14,690	105/-	77,100 *													
Music		9,260	3,350	12,610	105/-	66,200 *													
Psychology		10,020	3,610	13,630	125/-	85,200 *													
Leather Industries		18,620	11,170	29,790	125/-	186,200 *													
Colour Chemistry and Dyeing		15,080	9,050	24,130	150/-	181,000 *													
Other Departments																			
Senior Common Room		34,400	12,400	46,800	110/-	257,400													
University House Alterations						95,000													
Central Kitchen						250,000													
New Library and Brotherton Library Extension				103,828	105/-	545,100													
Physical Education Centre		60,782	9,700	70,482	120/-	423,000													
Students Union Extension		48,350	14,500	62,850	100/-	314,300													
Institute of Education		41,880	15,080	56,960	105/-	299,000 *													
Adult Education and Extra-Mural Studies		10,920	3,930	14,850	105/-	78,000 *													
Residential																			
Weetwood Residential Centre Stage 4					248,800														
Dining Unit 1					50,000														
Precinct Stage 1 (240 students)					265,000														
Dining Unit 2					50,000														
Precinct Stage 2 (240 students)					265,000														
Dining Unit 3					50,000														
Precinct Stage 3 (240 students)					265,000														
Precinct Stage 4 (240 students)					265,000														
Central Boiler Houses					400,000														
Garages for 2,800 Cars					1,260,000														
Site Development incl. Cemetery						1,760,300													
Total Cost of Major Buildings and Site Development						14,995,900													
<i>*Buildings not completed before 1970 – Total Cost £972,700</i>																			
Cost Per Year: Major Buildings								834,400	1,116,300	1,185,200	1,188,000	1,487,500	1,144,200	1,416,000	1,221,200	1,240,000		1,100,000	
Cost Per Year: Site Development (Cemetery 1963 – 1964)								123,100	203,100	203,100	123,010	123,000	123,100	123,100	123,100	123,100	123,100	123,100	123,100

90a Building programme 'A' (see overleaf)

The buildings listed in this programme, completed by the dates stipulated, would be required to meet the present needs of the departments as well as those needs which have been foreseen if the University is to provide adequately for 7,000 students by 1970.

◀ The thick lines indicate the period of time required for the actual erection of each building; the double lines indicate the period of time required, for each building, to confirm schedules of accommodation, to prepare designs, to prepare working drawings and specifications, to obtain statutory approvals, to draw up Bills of Quantities and to obtain tenders – all prior to the start of work on site.

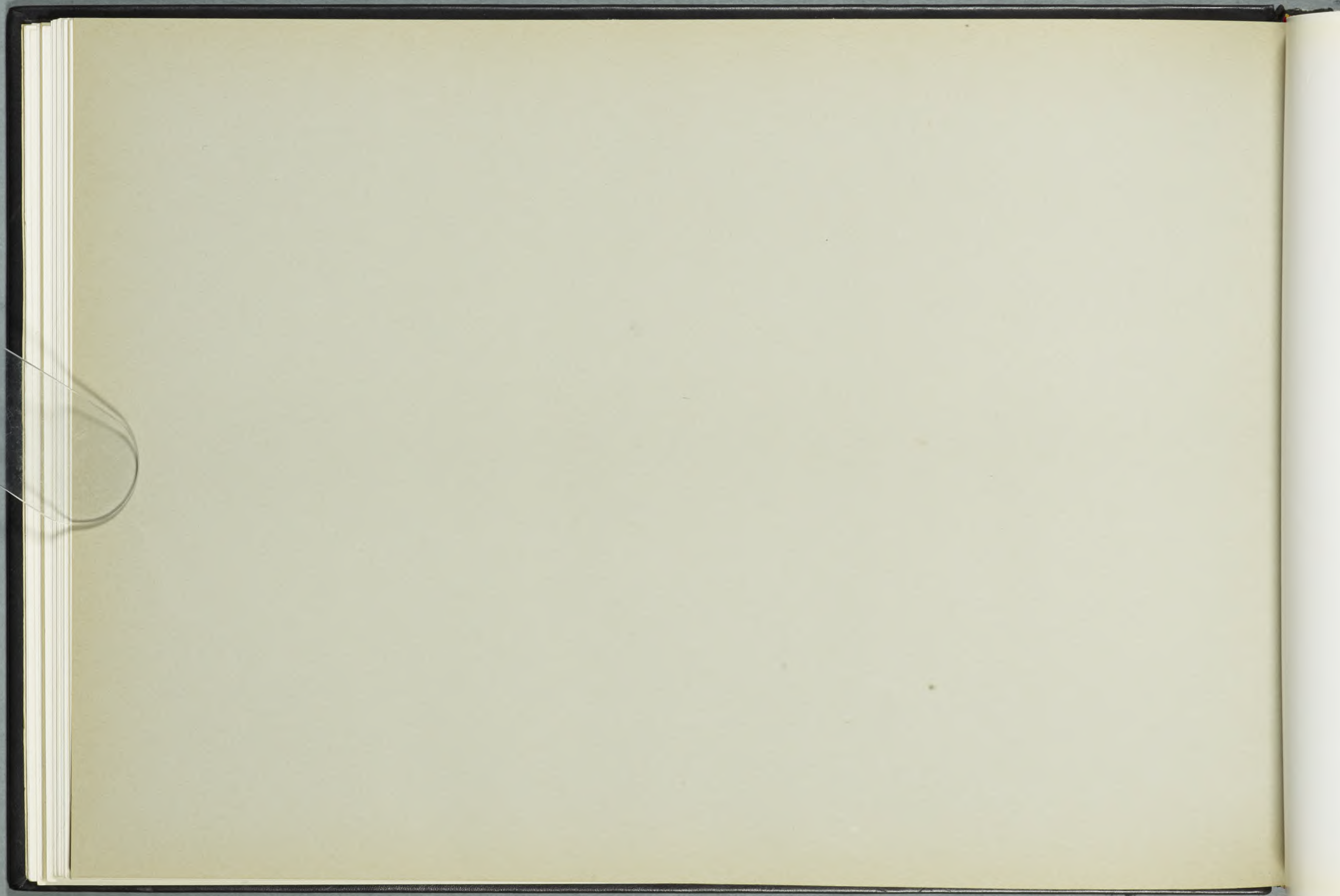
91a Building programme 'B' (see overleaf)

The buildings listed in this programme, completed within the time stipulated, would only provide accommodation for limited expansion by 1970 involving over-crowding in some departments and involving inadequate provision for students in residence.

◀ The thick lines indicate the period of time required for the actual erection of each building; the double lines indicate the period of time required, for each building, to confirm schedules of accommodation, to prepare designs, to prepare working drawings and specifications, to obtain statutory approvals, to draw up Bills of Quantities and to obtain tenders – all prior to the start of work on site.

Section 5

Town planning implications

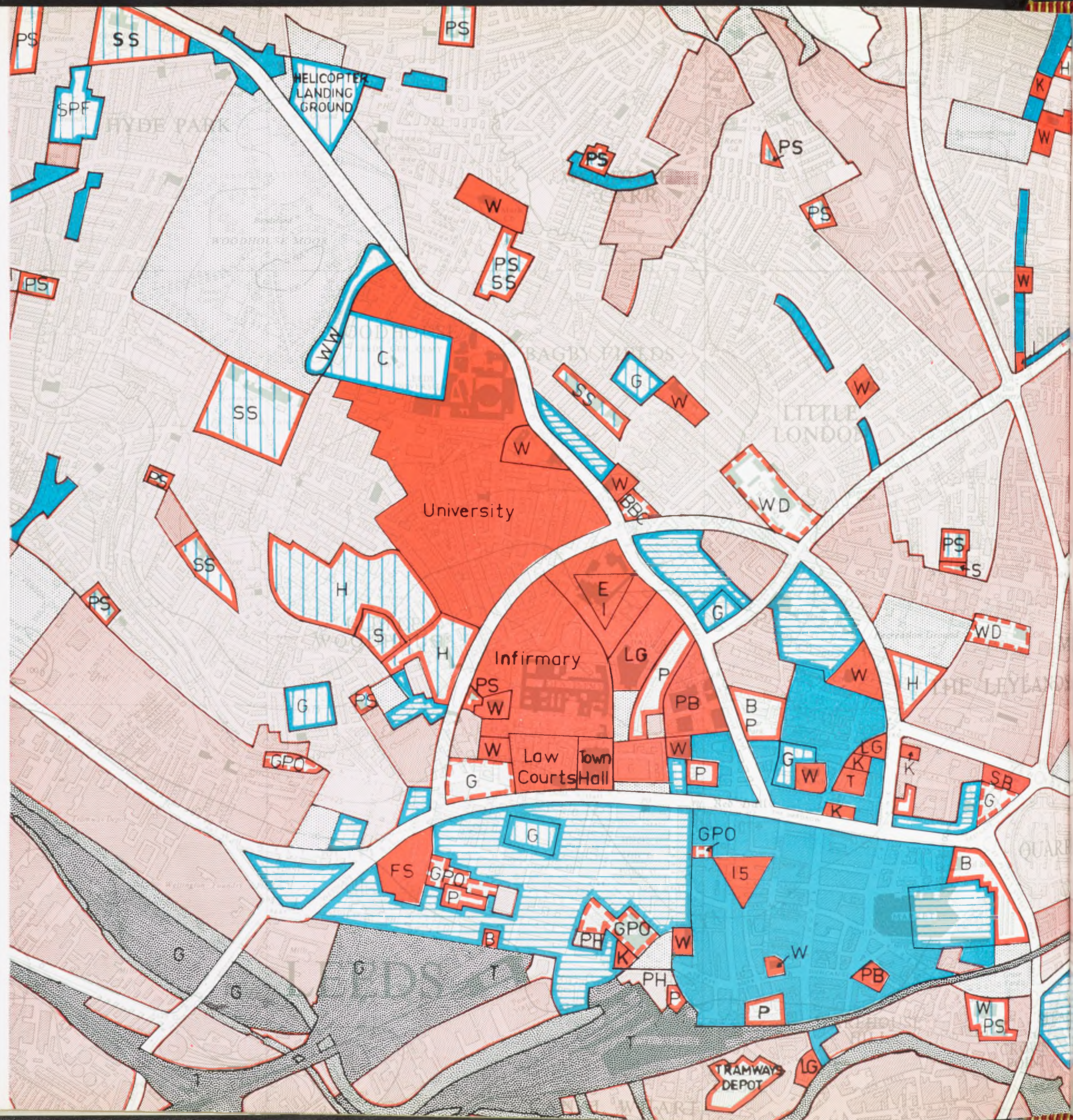
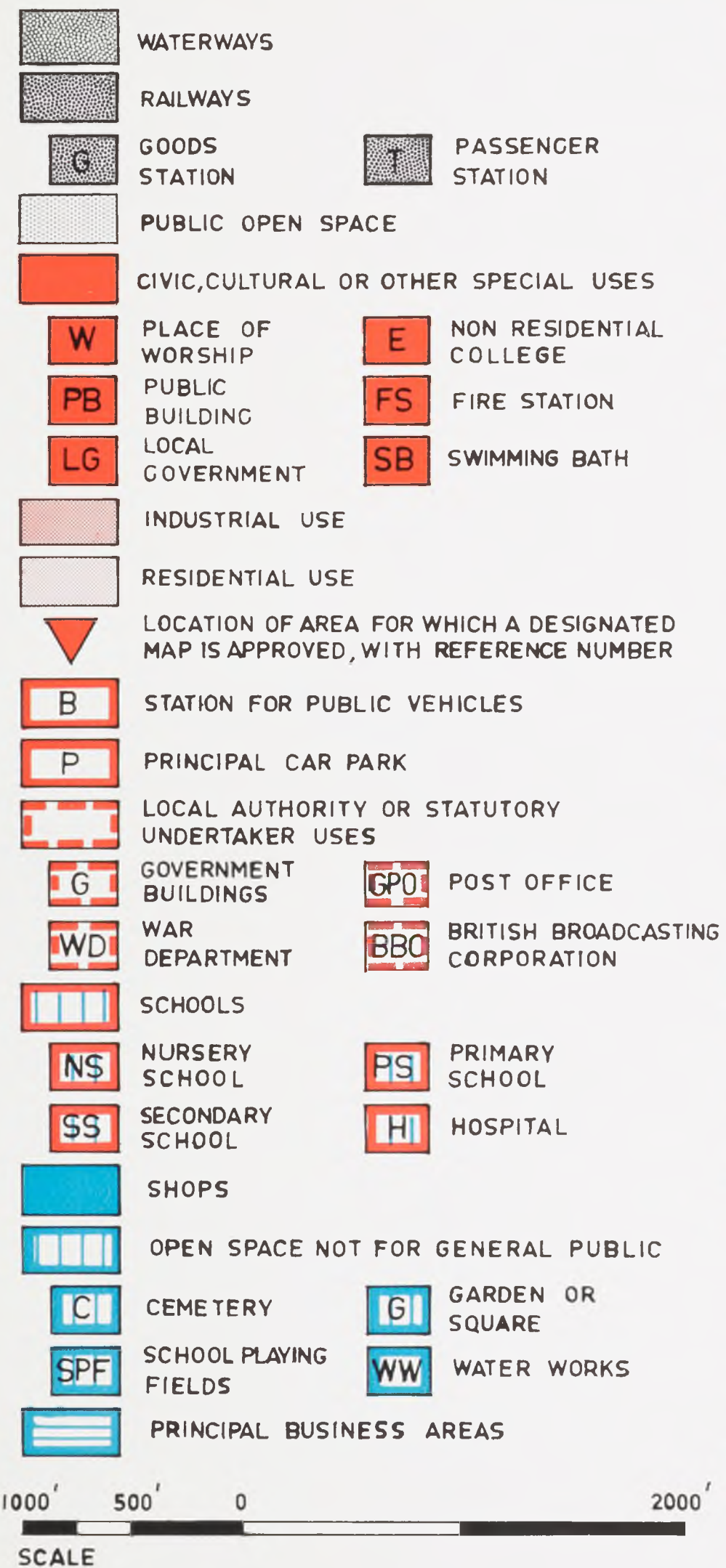


Town Planning implications

- 1 The accompanying diagrams indicate the extent to which the outline proposals included in this report would involve changes in the City Development Plan. Although the changes are not inconsiderable, neither are they fundamental. The blocks of study-bed-rooms are, for the most part, confined to areas already zoned as residential, the principal new academic buildings are planned on land most of which is already zoned for university development and much of which is, in any case, soon to be cleared; even the new hospital proposed to replace the four United Leeds Hospitals is sited on land zoned for hospital building in the City Plan. If the proposals included in this report were to turn out to be generally acceptable, we would advise the University to submit an application to the City authorities for the inclusion of the whole University and hospital precinct in a single Comprehensive Development Area; if approved, this would, in the long run, ensure that the proper development of the whole site could proceed in a truly comprehensive way to a phased programme which would be advantageous from social, technical, economic and aesthetic points of view (94a, 95a, 96a).
- 2 The proposals we have put forward regarding the future development of the Infirmary arose out of considerations which, strictly speaking, were outside our terms of reference, despite the inescapable affinity between a University Medical School and the teaching hospital with which it is necessarily associated. It is, therefore, for the Hospital and the City authorities to decide whether they would favour some such development as that envisaged in this report. If our proposals do, in

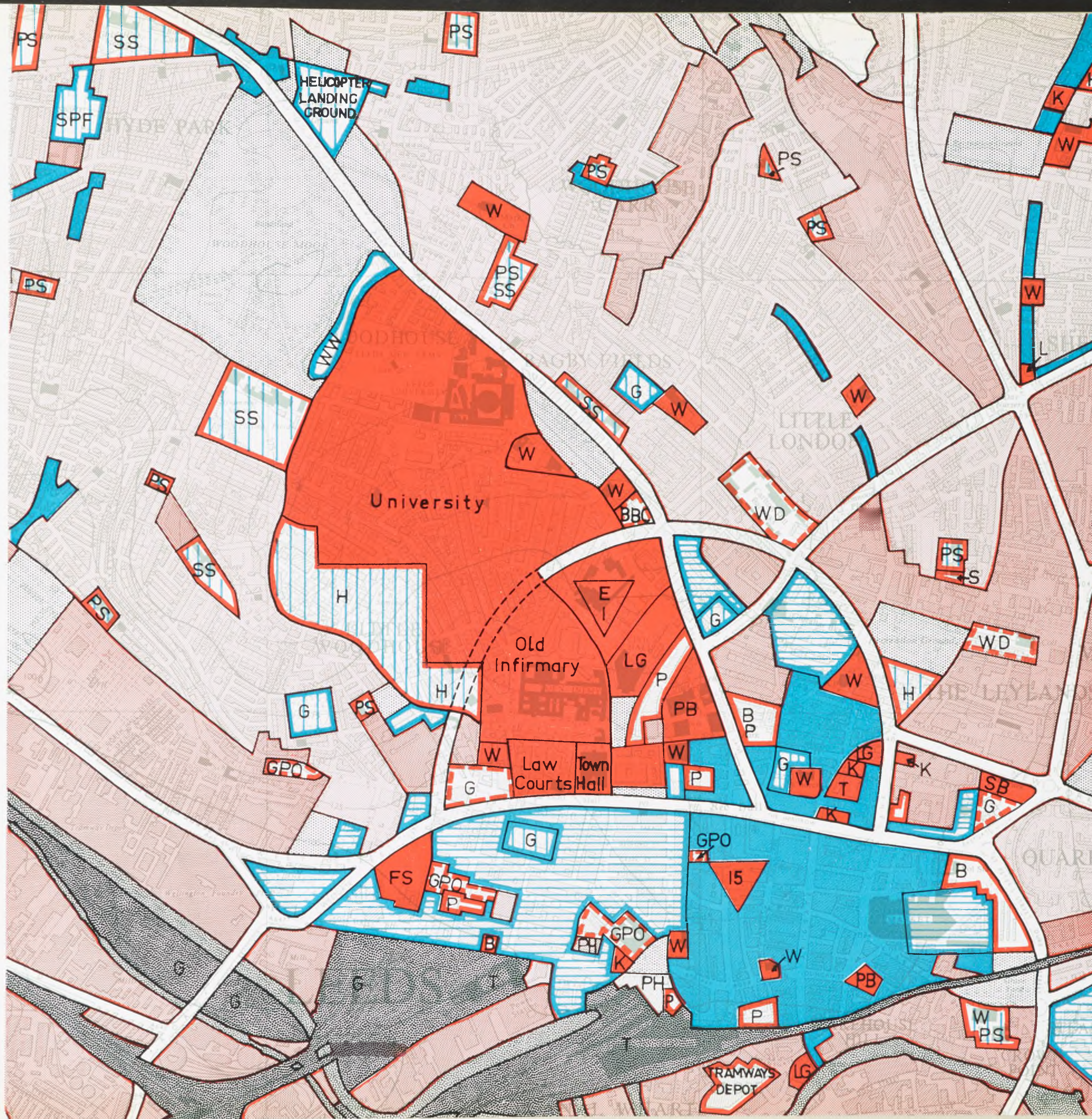
broad outline, find acceptance the future zoning of the existing Infirmary site will have to be considered. Our advice at this time is that the site should be preserved for University or hospital use. In the accompanying plans a block of flats for married students is included near to the existing nurses' home and other similar blocks will certainly be needed in the future which could be built on the Infirmary site; there are also certain to be some new university needs as yet unsuspected which might be accommodated in buildings on this land – particularly if the proposed new hospital blocks any future extension of the University precinct southwards. If a new Medical Centre is to be built there would undoubtedly be a demand for the erection of accommodation for ancillary teaching such as a school of nursing, radiology, etc. – which could also appropriately be planned on part of the site where the old Infirmary now stands.

- 3 In conclusion, it is evident, from a comparison of the City Development Plan as it now exists with the modified version which would be necessary if the present proposals were to be adopted, that the major principles and general balance of the Plan would not be disturbed by the changes. The ring road proposed would remain intact and, despite the closure of many small roads, the movement of traffic about the precinct would be adequately provided for with, in addition, ample allowance for off-street parking. At the same time, the University precinct, the Hospital zone, the Civic Hall, the Town Hall, the Law Courts, the Public Library and Art Gallery would all be closely linked with one another thus consolidating the planning of the heart of Leeds – as suggested by the red colouring on the City Plan.



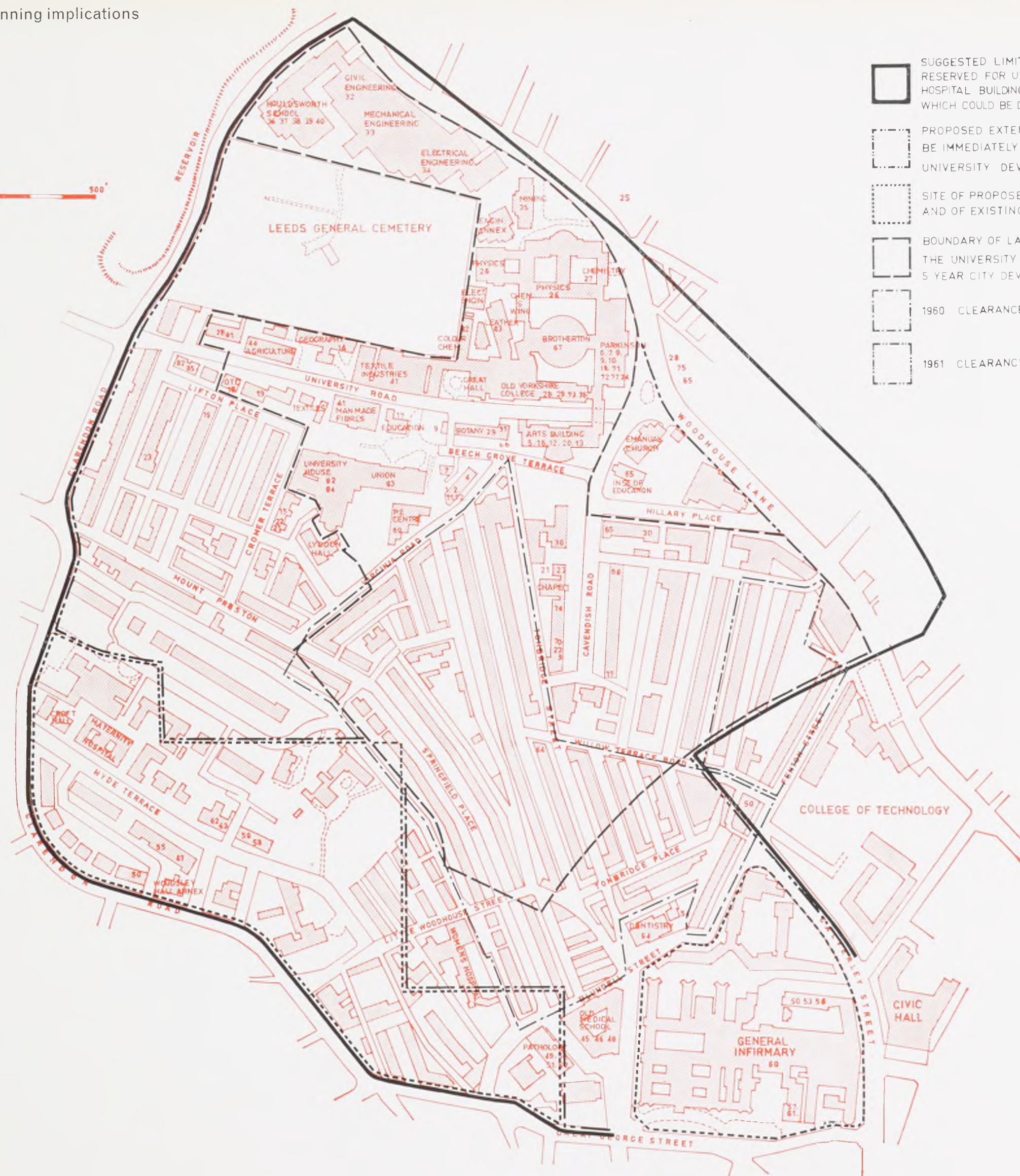
95a Possible revisions to the plan

The Development Plan of the City and County Borough of Leeds showing the modifications which would be necessary if the proposals included in this report were to be adopted.



94a The City of Leeds development plan

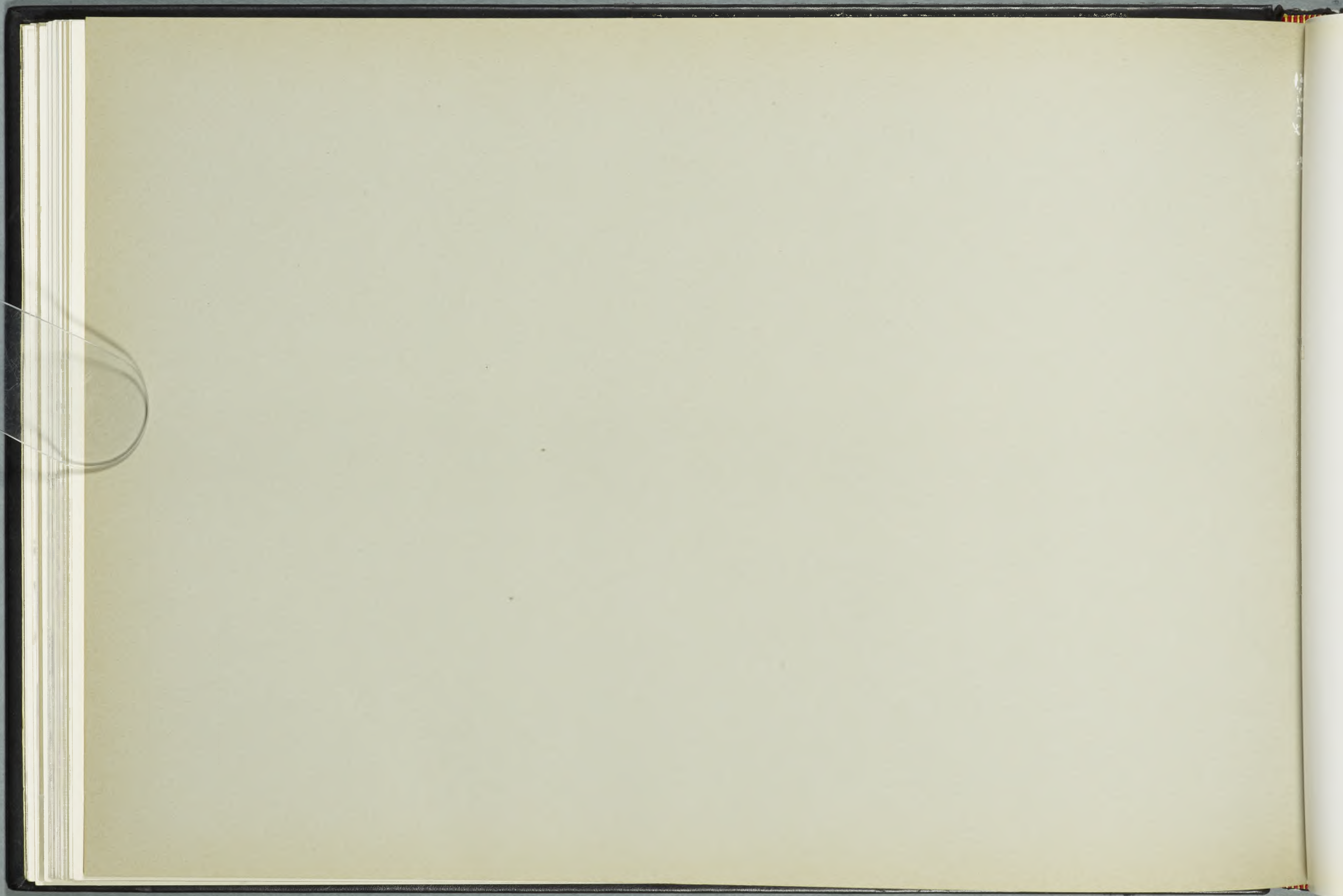
The Development Plan of the City and County Borough of Leeds prepared under the Town and Country Planning Act 1947. City Engineer and Planning Officer, D. Currie, M.I.C.E., M.I.Mun.E.



- SUGGESTED LIMIT OF AREA TO BE RESERVED FOR UNIVERSITY OR HOSPITAL BUILDING, ALL OR PART OF WHICH COULD BE DESIGNATED A C.D.A.
- PROPOSED EXTENSION OF LAND TO BE IMMEDIATELY ZONED FOR UNIVERSITY DEVELOPMENT.
- SITE OF PROPOSED NEW HOSPITAL AND OF EXISTING INFIRMARY.
- BOUNDARY OF LAND ZONED FOR THE UNIVERSITY IN THE PRESENT 5 YEAR CITY DEVELOPMENT PLAN.
- 1960 CLEARANCE ORDER.
- 1961 CLEARANCE ORDER.

96a Land suggested for designation as a Comprehensive Development Area

Conclusion



Conclusion

- 1 In the introduction to this report six questions were postulated: what is the problem? how can it be solved? how much and what type of building will be needed? how much land will be needed for this building? how long will it all take? how much will it all cost? The problem has now been studied and a solution proposed in terms of building volume, area of site required, time needed to carry out the proposals and the probable amount of capital expenditure involved. All these aspects of our proposals for the development of the University are closely inter-related; while they are naturally open to reconsideration, no modifications should be thought of in isolation. For instance, if less than a total student population of 7,000 is to be aimed at, the balance between the faculties is likely to be uneven if the direction to which the University is already committed is followed through – unless technological development were to be kept back; if a figure greater than 7,000 is aimed at the rate of expansion and of building may be too fast – particularly if quality in teaching is to be maintained. If less money is available per annum than is required to carry out the programme buildings cannot be available for use until a later date and accommodation will therefore not exist for the students to occupy. In short – subject to the prosecution of further research into problems of space utilisation and other matters as recommended in this report – whether or not the University of Leeds can absorb up to 7,000 students by 1970 depends upon the availability of sites when required, the availability of finance as required and the carrying out of building works to a coherent programme. Too many site restrictions or too little money made available too late can make it impossible, from a purely physical point of view, for the University to open its doors to the number of students envisaged by 1970. Nor should it be lightly assumed that more students can always, at a pinch and for a short time, be crowded into the University. The assumptions made in this report are that the maximum practicable use should be made of all space available and to be built; this implies that the use of rooms will be so organised that they are big enough but not too big and that all the space planned is useful for one purpose or another. Nor should it be forgotten that the provision of the right sort of buildings is only a *sine qua non* of a thriving and growing university. Obtaining the right calibre of staff to meet the difficulties of teaching a constantly growing number of students is a far more intractable problem and one that is intensely aggravated by inadequacy of room to work in.
- 2 We therefore recommend that the University should first decide on whether the expansion postulated should take place by 1970. If this is to be so, an application should be made to the City Authority for the designation of the site required as a comprehensive development area which will make it possible to be sure that the sites for new buildings will be obtainable as and when required. Parallel to this some assurance should be obtained from the University Grants Committee that development on the lines envisaged would be approved and that the necessary finance would be made available subject to the usual checks to safeguard its proper spending. It cannot be too strongly emphasised that it is impossible to realise the proper growth of a comprehensive plan for a complex community such as a university unless the intention is clear and agreed, unless the site is available, and unless the finance is promised.
- 3 Provided these conditions are fulfilled the prospects are immensely promising for Leeds both as a city and as the home of a thriving university. The opportunity to unite the University precinct with the city centre, within a truly urban environment and in a way which is peculiarly of our time, is unique and should be welcomed. Creating new surroundings calculated to delight the eye and to express the vitality of the activities which will be pursued is, however, only the visible appearance of the picture; beyond this is the idea of unity between 'town and gown' which, in this case, represents what may at first appear to be the paradoxical combination between Leeds as an industrial commercial City and Leeds as a University. The former epitomises the capacity to create wealth whereas the latter represents not only the highest and most concentrated form of activity known to man – the pursuit of knowledge – but also an act of faith. For it is no exaggeration to say that the confidence of a civilisation in itself may be judged by the value of its investment of energy and wealth in the widening of educational opportunities for the coming generations.



Appendices

Estimate of numbers of students in universities in England and Wales and at the University of Leeds

Candidates for the General Certificate of Education Examinations of the Joint Matriculation Board, 1955-1959

Crowther Report, Table 35. Relative size of sixth-form population in different years (1958 = 100) on two assumptions (England and Wales)

Number of full-time students at the University of Leeds

Home-residence of full-time students at the University of Leeds

Number of students entering courses in Faculties of Arts, Economic and Social Studies and Law

Number of students entering courses in Faculties of Science, Technology and Medicine

Number of students attending departments in Faculties of Arts, Economic and Social Studies and Law

Number of students attending departments in Faculties of Science, Technology and Medicine

Analysis of courses and use of rooms by departments—a facsimile

Standards of accommodation

List of departments

Forecast schedules of accommodation:

Music; Education; Psychology

Economics and Commerce; Social Studies

Law

Mathematics; Mathematics Electronic Computing Laboratory

Physics; Zoology; Botany; Geology

Colour Chemistry and Dyeing; Leather Industries

Institute of Education (not including Children's Centre); Institute of Education, Children's Centre; Institute of Education and Department of Education (shared accommodation); Adult Education and

Extra-Mural Studies; Brotherton Library Extension and New Building;

Physical Education Centre; Senior Common Room;

Students' Union Extension;

Medical School

Existing lecture rooms and lecture theatres, 1958

New lecture rooms and lecture theatres available in the future, 1958-1963

Summary of lecture theatre accommodation, 1963

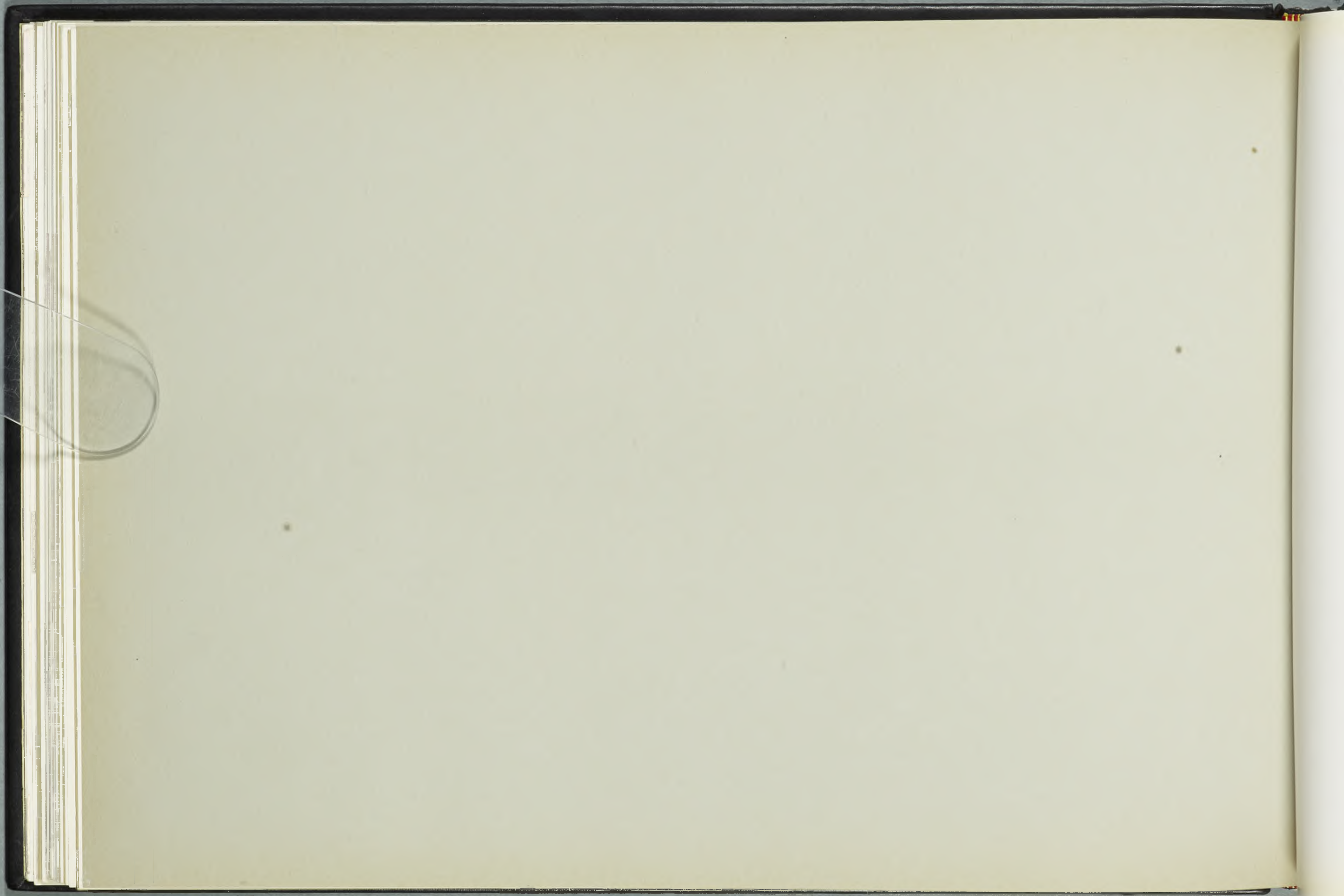
Survey of existing buildings

Houldsworth School of Applied Science; Civil, Mechanical and Electrical Engineering; Mining; Physics and Chemistry;

Parkinson Building; Brotherton Library; Yorkshire College;

Arts Building; Rayon Building; Agriculture;

University House and Students' Union



Estimate of numbers of students in universities in England and Wales

- 1 The first three columns of the following Table show the actual number of persons in England and Wales who are 17 years old and 18 years old in each of the years 1950 to 1959 inclusive. The figures are quoted from the statistical reports of the Ministry of Education (H.M.S.O.) which in turn are based on figures given by the Registrar-General. The Registrar-General's figures relate to the 31st December in the year preceding that shown. The estimated number of 17- and 18-year olds from 1960 to 1970 inclusive are taken from the same source, i.e., Table 2 of the Ministry of Education's statistics for 1958 (*Education in 1958*). These figures clearly show the age-group 'bulge' in the years 1964 to 1968. Most recent demographic statistics indicate that although the numbers in the 17- and 18-year old age-group fall from a peak in 1965-66 to a 'plateau' in 1968-72 (a 'plateau' considerably higher than the present numbers) they will rise again in the years 1973-74 onwards (see Chart No. 1 of 'The Crowther Report' - H.M.S.O.).
- 2 Columns (d) to (f) of the Table show the numbers of 17- and 18-year olds in grant-aided and independent schools in each of the years 1953 to 1958 inclusive. These figures are also taken from Table 2 of the statistical reports of the Ministry of Education. The figures given in these columns for 1959 are an estimate based on the proportions and tendencies of the previous six years. Column (g) shows as a percentage the proportion of the total 17- and 18-year old age-group who are at school (i.e., % Column (f) of Column (c)). It shows clearly the 'trend' for more young people to stay on at school and indicates that each year this percentage goes up by 0.4%. The Crowther Report (101T2) evaluates this 'trend' at 0.5% basing it on the 17-year old age-group only. The increase of 0.4% may, therefore, be an under-estimate but the figures in Column (f) for 1960 onwards are nevertheless based on the continuation of the 'trend' at this present rate.
- 3 Column (h) shows the number of students entering the universities of England and Wales to read for undergraduate qualifications during the years 1953 to 59 inclusive. These figures are taken from Table 2 of the annual returns of the University Grants Committee (H.M.S.O.); the figures for 1958 and 1959 are estimates. Although the figures in this column do not strictly relate to the figures in the previous columns in so far as they include mature students entering the universities other than from school, it will be noticed that during the years 1952 to 1957 inclusive, the number of students entering universities bears a constant relation, i.e., 33%, to the number of 17- and 18-year olds in schools as shown in Column (j) (i.e., % Column (h) of Column (f)). In 1958 the relation between these two figures was 31% and in 1959 29%.

The figures shown in Column (h) for 1960 to 1970 inclusive are calculated as 30% of the total numbers of 17- and 18-year olds in schools as shown in Column (f). They indicate the possible number of students entering universities in those years on the assumption that places are available for approximately 30% of sixth-formers. It may well be that more than this proportion of sixth-formers will be clamouring for entry to the universities. These figures clearly forecast that the universities must expect something like double the present demand for places by 1965.

- 4 Column (k) shows the number of students entering the University of Leeds in the years 1950 to 1959 inclusive and Column (l) their relationship (expressed as a percentage) to total university entries in England and Wales; this indicates that the University of Leeds accepts about 6% of the total university entry. If this figure is projected and shown in Column (k) for 1960-1970 inclusive some indication can be gained of the pressure on places that the University can expect during the next decade. In 1959 about 8,000 applications were received and nearly 1,500 students were admitted: an entry of about 2,850 in 1966 would therefore represent more than 15,000 applications.
- 5 Column (m) shows the total number of students in the University in the years 1950 to 59 and shows that, during the last six years, at least this is approximately three times the entry number. A projection of a sort can therefore be made showing the total numbers that could accrue from the hypothetical entries shown in Column (k). This projection suggests that, as a conservative estimate, there would be about 8,500 students in the University in the late 1960's if increases in the number of 17- and 18-year olds receiving full time education which arise from the 'bulge' and the 'trend' were applied proportionately to present university numbers. This would assume, however:
 - (a) that places were available;
 - (b) that there was a proportionate increase in State and Local Education Authority maintenance grants for students; and
 - (c) that (i) the proportion of persons capable of benefiting from university education during the 'bulge' period is the same as it is now, and (ii) the extra numbers of young people staying on at school as a result of the 'trend' will emerge with the same distribution of ability as their present-day counterparts: only this would justify a correlation between the 'trend' and the provision of university places, for universities will clearly not wish to lower their standards.

It must also be borne in mind that the 'peak' of entry figures precedes by one or two years the peak of total figures, and a simple formula based on direct multiplication of admission numbers is therefore open to misinterpretation.

Table 100T1: Estimate of numbers of students in Universities in England and Wales and at the University of Leeds

NOTES:

- 1 Estimated figures for the 17-year old and 18-year old age-groups for 1960 to 1970 are taken from 1958 tables: mortality has not therefore been fully taken into account. For the purpose of this table the 18-year old age-group is assumed to be the same as the 17-year old age-group of the previous year.
- 2 The 'trend' is assumed to continue at an even rate during the period 1960 to 1970. If current tendencies in the United States are any guide to the future in this country, conditions relating to the employment of young people might well make full-time school education to the age of 18 the rule rather than the exception.

- 3 The proportion of young people entering the universities was affected in the post-war period by the rapid expansion of the number of Government and local education authority grants awarded. This meant that a university education was not denied to any person capable of benefiting from it, and universities were able to recruit from previously untapped resources. This new generation of university graduates will expect the same privileges for their children, and it is clear that sooner or later the universities will need to define what proportion of those of age to enter universities and receive full-time education are to be given places. At present this proportion is about 30%, but only 7.3% of the 17- and 18-year old age-groups are now receiving full-time education. If all 17- and 18-year olds were at school would the universities still accept 30% of them (a situation comparable to that already existing in the United States) or would the proportion be less? In default of an answer to this question, the figure of 30% has been used in this table (Col. (j)): even by 1970 it

refers to conditions under which only 11.7% of the 17- and 18-year old age-groups are assumed to receive full-time education.

- 4 The figure of 6% is taken as a rough average of the past five years. Its significance should not be over-estimated, as the proportion of students coming to the University of Leeds is bound to vary as other universities develop and as new universities come into being.
- 5 The factor of 3.0 is taken as the average of the last six years. This figure, which roughly represents the average number of years a student spends in this University, tends to be low during a period of rapid expansion. In the later years of the decade when expansion is anticipated to be slower than at present 3.0 may be an under estimate.

	Total number of 17- and 18-year olds in England and Wales			17- and 18-year olds in grant-aided and independent schools in England and Wales			Percentage of total number i.e. % (f) of (c)	Numbers entering Universities of England and Wales to read for under-graduate qualifications	% (h) of (f)	Number of students entering the University of Leeds	Percentage of total entrants i.e. % (k) of (h)	Total number of students in the University of Leeds	(m) (k)
Actual	17-year old (a)	18-year old (b)	Total (c)	17-year old (d)	18-year old (e)	Total (f)	(g)	(h)	(j)	(k)	(l)	(m)	(n)
1950	563,000	585,000	1,148,000	35,699	12,789	48,488	4.2	18,935	39	501	4.8	3,214	3.6
1951	536,000	563,000	1,099,000	34,388	12,391	46,779	4.3	19,047	41	920	4.8	3,182	3.5
1952	557,000	536,000	1,093,000	36,861	12,151	49,012	4.5	18,037	37	915	5.1	3,142	3.4
1953	558,000	557,000	1,115,000	40,796	13,218	54,014	4.9	17,959	33	989	5.5	3,228	3.3
1954	565,000	558,000	1,123,000	43,112	15,336	58,448	5.2	19,103	33	1,047	5.5	3,363	3.2
1955	567,000	565,000	1,132,000	44,895	16,516	61,411	5.4	20,367	33	1,053	5.2	3,427	3.3
1956	574,000	567,000	1,141,000	48,830	17,503	66,333	5.8	21,736	33	1,221	5.6	3,777	3.1
1957	572,000	574,000	1,146,000	51,290	20,026	71,316	6.2	23,405	33	1,413	6.0	4,125	2.9
1958	546,000	572,000	1,118,000	54,353	22,622	76,975	6.9	23,800(est)	31	1,519	6.4	4,502	3.0
1959	535,000	546,000	1,081,000	55,500(est)	23,500(est)	79,000(est)	7.3	23,200(est)	29	1,489	6.4	4,655	3.1
Continuance of trend is assumed at plus 0.4% each year (see 2 above)													
Estimated	(see 1 above)			(see 2 above)									
1960	604,000	535,000	1,139,000	87,703			7.7	26,311	30% (see 3 above)	1,579	6.0% (see 4 above)	4,737	3.0 (see 5 above)
1961	633,000	604,000	1,237,000	100,197			8.1	30,059		1,804		5,412	
1962	695,000	633,000	1,328,000	112,880			8.5	33,864		2,032		6,096	
1963	629,000	695,000	1,324,000	117,876			8.9	35,363		2,122		6,366	
1964	767,000	629,000	1,396,000	129,828			9.3	38,948		2,337		7,011	
1965	831,000	767,000	1,598,000	155,006			9.7	46,502		2,790		8,370	
1966	733,000	831,000	1,564,000	157,964			10.1	47,389		2,843		8,529	
1967	694,000	733,000	1,427,000	149,835			10.5	44,951		2,697		8,091	
1968	663,000	694,000	1,357,000	147,913			10.9	44,374		2,662		7,986	
1969	647,000	663,000	1,310,000	148,030			11.3	44,409		2,665		7,995	
1970	647,000	647,000	1,294,000	151,398			11.7	45,419		2,725		8,175	

'Buige'

Table 101T1: Candidates for the General Certificate of Education Examinations of the Joint Matriculation Board

1955-59

- 1 The following table and the graph in diagram 10a seek to illustrate by reference to entries to the General Certificate of Education examinations of the Joint Matriculation Board of the Universities of Birmingham, Leeds, Liverpool, Manchester and Sheffield, the swing towards science subjects in the sixth forms of Grammar Schools.
- 2 A representative selection of arts and science subjects has been chosen and the numbers of candidates entering (not necessarily passing) examinations at the Advanced and Ordinary level in these subjects are shown. These figures have been abstracted from Table 5 of the Annual Reports of the Joint Matriculation Board and are published with the kind permission of the Chairman and Secretary of the Board.
- 3 The figures at the foot of the table and those in the graph (diagram 10a) indicate the percentage annual increase in entries for these arts and science groups of subjects and in both groups as a whole using 1955 as a base year. Index figures, also based on 1955, for some individual Ordinary level subjects are shown above the figures for 1955, 1958 and 1959. The comparison of these index figures in the science and in the arts groups suggests that the swing towards science subjects is likely to continue. A possible interpretation of the implications of these figures as regards university entry is that subjects in the Faculties of Science, Technology and Medicine may expect to receive a greater share than the Arts Faculties of the increased number of applications arising from the 'bulge' and the 'trend'.

	Advanced Level					Ordinary Level				
	1955	1956	1957	1958	1959	1955	1956	1957	1958	1959
English Literature	4,391	4,731	4,771	5,062	5,044	100			113	118
History	3,269	3,388	3,592	3,811	3,870	29,557	30,569	30,884	34,027	37,594
Geography	2,574	2,905	2,894	2,900	3,133	100			116	130
Music	256	317	305	288	289	24,270	24,908	25,840	28,105	31,530
Latin	1,316	1,413	1,437	1,547	1,534	100			111	124
French	3,274	3,361	3,370	3,509	3,623	26,830	27,766	27,336	29,761	33,408
German	705	750	732	807	869	1,912	1,959	1,897	2,097	2,052
Spanish	180	181	208	236	237	10,501	10,741	10,969	11,365	12,360
Italian	12	20	8	14	19	100			112	125
Russian	4	8	7	7	12	29,695	30,337	30,572	33,397	37,072
Total	15,981	17,074	17,324	18,181	18,630	4,613	5,114	4,975	5,636	6,285
Mathematics	3,216	3,522	3,985	4,548	4,969	1,033	1,038	1,051	1,233	1,401
Mathematics and Theoretical Mechanics	1,010	1,000	1,102	1,178	1,262	49	45	78	88	101
Physics	5,457	5,818	6,309	6,994	7,550	14	18	11	31	50
Chemistry	5,006	5,343	5,797	6,290	6,497	100			120	138
Botany	681	793	800	783	794	31,950	33,607	34,950	38,462	43,951
Zoology	735	848	882	937	977	100			132	159
Biology	2,006	2,097	2,212	2,242	2,363	11,162	11,722	12,887	14,688	17,512
Geology	131	150	188	212	252	100			121	151
Total	18,242	19,571	21,275	23,184	24,664	10,714	11,188	12,351	13,868	16,184
Total advanced level candidates in these subjects						83	104	92	97	55
Percentage increase in entries for above subjects since 1955						100			125	145
						13,772	14,684	15,693	17,176	19,932
						19				96
						0	6.8	8.4	13.7	16.6
						0	7.3	16.8	27.4	35.2
						0	7.1	12.8	21.0	26.5
						Arts				
						Science				
						Total				

Table 101T2: Crowther report table 35. Relative size of Sixth Form Population in different Years (1958=100) on two Assumptions (England and Wales)

Year	Actual Size of Sixth Form	Year	Conjectural Size of Sixth Form	
			Assumption A	Assumption B
1948	69	1958	100	100
1949	67	1959	98	105
1950	65	1960	110	127
1951	62	1961	116	142
1952	66	1962	127	166
1953	73	1963	115	158
1954	77	1964	141	205
1955	81	1965	152	233
1956	88	1966	134	215
1957	94	1967	127	213
1958	100	1968	121	213

Note: Assumption A is that the proportion of the 17-year-old age-group that is to be found in maintained schools is the same as now, and that the increase is solely caused by the high birth-rate. Assumption B is that the proportion continues to rise by 0.5 per cent per annum, which is approximately the average rate of increase of the past decade.

Numbers of full-time students in the University of Leeds 102T1, 103T1, 103T2, 104T1, 105T1

- 1 Table 102T1 shows the actual numbers of new students ('admissions') and of all students ('total') in the Arts group of Faculties, in the Faculties of Science, Technology and Medicine, and for the University as a whole, for each of the years 1953 to 1959 inclusive, and estimated numbers in 1965 and 1970. It also expresses the number of students in each of the four Faculty groups as a percentage of the total number of students, and compares the estimated expansion in the four groups measured from 1959 as the base year.
- 2 Tables 103T1, 103T2 show the actual number of students admitted to each department or course in the years 1953 to 1959 inclusive, and the estimated number of admissions in 1965 and 1970.
- 3 Tables 104T1, 105T1 show the actual number of students in each department in 1958, and estimated numbers for 1965 and 1970, divided into undergraduate and postgraduate; it also shows the number of students from other departments attending courses in each department (the time given to each course may vary from one hour a week to one-third or more of the student's time in the University.)
- 4 The Tables are sub-divided, (a) showing the Arts group of Faculties and (b) the Faculties of Science, Technology and Medicine, together with a grand total. Estimates of students in each department are not given in the Arts group of Faculties as it is not practicable to estimate with any precision how many students will be accepted into individual Arts departments in future years. It is possible, however, to make an estimate with some degree of probability for the overall figure, and the estimates for 1965 and 1970 are accordingly given this way.

Table 102T1

	Arts				Science				Technology				Medicine				Total		
	Admissions	Total	% of Grand Total	Index of Increase 1959 = 100	Admissions	Total	% of Grand Total	Index of Increase 1959 = 100	Admissions	Total	% of Grand Total	Index of Increase 1959 = 100	Admissions	Total	% of Grand Total	Index of Increase 1959 = 100	Admissions	Total	Index of Increase 1959 = 100
1953	455	1,237	38%		147	498	15%		231	821	25%		156	672	20%		989	3,228	
1954	422	1,275	38%		190	561	17%		284	887	26%		151	640	19%		1,047	3,363	
1955	466	1,345	39%		178	585	17%		270	900	26%		139	642	18%		1,053	3,472	
1956	506	1,428	38%		224	678	18%		356	1,055	28%		135	616	16%		1,221	3,777	
1957	627	1,579	38%		236	722	17%		406	1,199	29%		144	625	15%		1,413	4,125	
1958	697	1,779	39%		248	807	18%		429	1,300	29%		145	616	14%		1,519	4,502	
1959	682	1,834	39%	100	243	839	18%	100	431	1,397	30%	100	133	585	13%	100	1,489	4,655	100
1965 (estimated)	900	2,400	36%	131	380	1,300	20%	155	660	2,165	33%	155	180	750	11%	128	2,120	6,615	142
1970 (estimated)	900	2,500	35%	136	460	1,610	22%	192	720	2,330	32%	167	170	760	11%	130	2,250	7,200	155

Table 102T2: Home-residence of full-time students at the University of Leeds

	Full-time students whose homes are within 30 miles of Leeds		Full-time students whose homes are further than 30 miles from Leeds		Total
	No.	% of Total	No.	% of Total	
1938-9	1,184	67.4%	573	32.6%	1,757
1945-6	1,326	63.3%	770	36.7%	2,096
1948-9	1,923	59.9%	1,286	40.1%	3,209
1951-2	1,498	47.1%	1,684	52.9%	3,182
1954-5	1,332	39.6%	2,031	60.4%	3,363
1957-8	1,462	35.4%	2,663	64.6%	4,125
1958-9	1,405	31.2%	3,097	68.8%	4,502

Table 103T1: Numbers of students entering courses in Faculties of Arts, Economic and Social Studies and Law

Course or Department	Actual Admissions							Estimated Admissions	
	53	54	55	56	57	58	59	65	70
B.A. General Studies	97	106	95	120	124	136	92	(See Note 3 below)	
Greek and Latin	6	9	8	6	17	16	10		
Semitics					2	1	2		
English (Language and literature)	49	44	55	55	62	53	64		
French	45	42	36	45	49	63	45		
Spanish	6	18	12	12	13	10	12		
Italian	1	1	1	2	2	2	4		
German	5	7	16	13	20	24	12		
Russian		4	1	4	13	9	11		
Combined Languages courses	4	9	7	10	10	14	11		
History	22	20	29	29	29	38	40		
Geography (Arts)	29	24	29	27	28	34	26		
Theology and Biblical Studies	25	13	11	9	20	14	15		
Psychology	2	2	1	7	10	11	—	(See Note 2 below)	
Music	4	4	2	4	7	4	8		
B.A. Textile Design	6	12	4	4	8	10	14		
Total	301	315	307	347	414	439	366		
Economics and Commerce	12	13	34	27	63	52	49		
Social Studies	64	52	52	48	45	44	48		
Total	76	65	86	75	108	96	97		
Law	37	22	29	22	34	45	32		
Undergraduate Total in the three Faculties	414	402	422	444	556	580	495		
Certificate course in Education, other									
Postgraduate and miscellaneous students (See Note 1)	41	20	44	62	71	117	187		
Total Arts Group	455	422	466	506	627	697	682	900	900

Notes:

1. The numbers shown for the Postgraduate Certificate in Education and other postgraduate courses represent students admitted to the University for the first time, mainly from other universities: they do not include students of this University proceeding to postgraduate work.

2. The Department of Psychology is now providing specialist courses in the Faculty of Science and the B.A. course has been discontinued.

3. It is thought that in 1965 the total numbers of students in the Arts Groups of Faculties may be 2,400 (of which 250-300 may be postgraduate students), and in 1970, 2,500 (300-350 postgraduate). These figures would arise from an annual intake of 900 students by 1965, as shown in the Table.

Table 103T2: Numbers of students entering courses in Faculties of Science, Technology, and Medicine

Course or Department	Actual Admissions							Estimated Admissions	
	53	54	55	56	57	58	59	65	70
Science:									
B.Sc. General Studies	54	52	46	49	40	40	33	55	55
Mathematics	9	7	8	12	14	12	23	25	25
Physics	29	43	52	56	63	68	48	80	100
Chemistry	34	51	41	53	70	76	78	110	120
Zoology	2	5	3	5	6	8	6	12	20
Botany			3	7	5	5	7	12	20
Geology	5	4	6	6	6	7	7	10	10
Geography (Science)				3	5	4	4	7	10
Physiology (Science)								3	5
Bacteriology	3	4		3	2	3	3	8	10
Biochemistry	8	9	10	8	10	9	12	18	25
Pharmacology	1	7	7	7		6	6	10	10
Postgraduate and miscellaneous*	2	8	2	15	15	10	16	30	50
Total Science	147	190	178	224	236	248	243	380	460
Technology:									
Civil Engineering						56	64	100	100
Mechanical Engineering	73	80	75	120	133	45	46	90	90
Electrical Engineering						39	37	70	90
Mining	25	20	25	24	25	27	22	30	30
Houldsworth School courses**	28	44	46	55	72	96	81	150	160
Textile Industries	43	60	60	56	76	61	62	72	72
Colour Chemistry and Dyeing	12	14	11	9	11	13	11	16	16
Leather Industries	12	9	9	12	12	9	12	14	14
Agriculture	19	28	35	44	35	35	39	45	45
Postgraduate and miscellaneous*	19	29	9	36	42	48	57	73	103
Total Technology	231	284	270	356	406	429	431	660	720
Medicine:									
Medicine	72	70	63	69	66	62	53	80	75
Dental Surgery	36	41	38	35	42	41	38	60	55
Health Visitors' Course	48	40	38	31	36	42	42	40	40
Total Medicine	156	151	139	135	144	145	133	180	170
Grand Total (including Arts)	989	1,047	1,053	1,221	1,413	1,519	1,489	2,120	2,250

*See Note 1 in previous table.

**The Houldsworth School provides courses in Fuel Science, Ceramics, Chemical Engineering and Metallurgy.

Table 104T1 : Numbers of students attending departments in Faculties of Arts, Economic and Social Studies and Law

Course or Department	1958 (actual as at 31st October)				1965 (estimated)				1970 (estimated)			
	Undergraduate Students 'Special Studies'	Postgraduate	Total	Students From Other Departments	Undergraduate Students 'Special Studies'	Postgraduate	Total	Students From Other Departments	Undergraduate Students 'Special Studies'	Postgraduate	Total	Students From Other Departments
B.A. General Studies	338	—	338	—								
Greek and Latin	40	2	42	103								
Semitics	2	2	4	45								
English (Language and Literature)	168	24	192	276								
French	123	4	127	241								
Italian	6	—	6	53								
German	50	—	50	85								
Russian	28	—	28	106								
Spanish	30	2	32	117								
Combined Languages courses	51	—	51	—								
History	101	5	106	292								
Philosophy	12	1	13	278								
Geography (Arts)	91	3	94	102								
Music	16	—	16	30								
Theology	41	3	44	118								
Department of Education	—	147	147	—								
Phonetics	—	—	—	300								
Psychology (Arts and Science)	25	1	26	15								
Fine Art	—	—	—	69								
Textile Design	20	—	20	—								
Economics and Commerce	165	5	170	558								
Social Studies	108	8	116	131								
Law	105	2	107	40								
Institute of Education	39	—	39	—								
Other Students	11	—	11	—								
Total Arts Group of Faculties	1,570	209	1,779		2,120	280	2,400		2,150	350	2,500	

Table 105T1: Numbers of students attending departments in Faculties of Science, Technology and Medicine

Course or Department	1958 (actual as at 31st October)				1965 (estimated)				1970 (estimated)			
	Undergraduate Students 'Special Studies'	Postgraduate	Total	Students From other Departments	Undergraduate Students 'Special Studies'	Postgraduate	Total	Students from other Departments	Undergraduate Students 'Special Studies'	Postgraduate	Total	Students from other Departments
Arts Group of Faculties (brought forward)	1,570	209	1,779	—	2,120	280	2,400	—	2,150	350	2,500	—
B.Sc. General Studies	183	—	183	—	160	—	160	—	160	—	160	—
Mathematics	31	8	39	946	70	15	85	1,492	80	25	105	1,626
Physics	164	16	180	449	240	30	270	664	320	45	365	721
Chemistry	180	49	229	630	320	100	420	973	380	120	500	1,006
Zoology	20	5	25	173	50	15	65	218	70	20	90	239
Botany	19	2	21	168	50	15	65	197	70	20	90	206
Geology	27	15	42	199	35	15	50	313	40	15	55	331
Geography (Science)	11	inc. in Arts	11	inc. in Arts	25	inc. in Arts	25	inc. in Arts	30	inc. in Arts	30	inc. in Arts
Physiology (Science)	0	inc. in Med.	0	145†	12	inc. in Med.	12	184†	18	inc. in Med.	18	189†
Biochemistry	33	16	49	153†	63	25	88	205†	90	35	125	198†
Pharmacology	15	inc. in Med.	15	130†	30	inc. in Med.	30	130†	32	inc. in Med.	32	130†
Bacteriology	9	4	13	156†	20	10	30	170†	30	10	40	172†
Total Science	692	115	807		1,075	225	1,300		1,320	290	1,610	

† These figures include Medical and Dental students: a considerable part of the work of these four Departments is in the Faculty of Medicine

Course or Department	1958 (actual as at 31st October)				1965 (estimated)				1970 (estimated)			
	Undergraduate Students 'Special Studies'	Postgraduate	Total	Students from other Departments	Undergraduate Students 'Special Studies'	Postgraduate	Total	Students from other Departments	Undergraduate Students 'Special Studies'	Postgraduate	Total	Students from other Departments
Civil Engineering	141	26	167	224	300	50	350	396	300	70	370	269
Mechanical Engineering	125	7	132		270	15	285		270	20	290	
Electrical Engineering	114	2	116		200	15	215		270	20	290	
Mining	85	15	100		85	20	105		85	25	110	
Houldsworth School of Applied Science	244	31	275	314	570	70	640	574	600	100	700	594
Textile Industries	213	79	292	20	220	80	300	20	220	80	300	20
Colour Chemistry	46	15	61	45	50	20	70	45	50	20	70	45
Leather Industries	34	8	42	—	40	10	50	—	40	10	50	—
Agriculture	102	13	115	31	130	20	150	45	130	20	150	52
Total Technology	1,104	196	1,300		1,865	300	2,165		1,965	365	2,330	
Medicine	375	5	380	—	405	15	420	—	405	25	430	—
Dental Surgery	194	—	194	—	285	5	290	—	285	5	290	—
Health Visitors	42	—	42	—	40	—	40	—	40	—	40	—
Total Medicine	611	5	616	—	730	20	750	—	730	30	760	—
Grand Total for All Departments	3,977	525	4,502		5,790	825	6,615		6,165	1,035	7,200	

CATEGORY OF COURSE	TITLE OF COURSE	GROUPS	NOS	COMPOSITION OF GROUP	TIME SPENT PER WEEK IN EACH ROOM BY EACH GROUP Please indicate rooms used e.g. "General Lecture Theatre", "Parkinson 302", Physics S1+S2 Laboratory and enter in the following order 1 Lecture Rms for more than 20 2 Small Teaching Rooms for 20 or less 3 Drawing Offices 4 Labs.																				NOTES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
A CATEGORY Courses given by your own Dept for your own students	A	All that is required is the briefest reference to the course which will serve to identify it e.g. Spanish Maths TI (Applied) Chemistry	Identify each group if the course is divided	Nos of Students in each group	Please indicate departments other than your own from which students come, and the number from each department. (See Example.)	PARKINSON BUILDING																Small Lecture Theatre	Baynes B4	Computing Lab	Chemistry B	Mech. Eng. Lecture Theatre	Textiles 1	Man-made Fibres 1	Elec. Eng. Lecture Theatre	Electronic Computing Lab	TOTAL HOURS PER CATEGORY	TOTAL HOURS PER STUDENT	TOTAL STUDENT-HOURS PER COURSE	TOTAL STUDENT HOURS PER CATEGORY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

Table 107T1 : Standards of Accommodation

Standards of accommodation generally accepted by the University Grants Committee are marked *UGC*

1 General teaching spaces

Lecture theatres, tiered :		
(1) for first 30 students (or part)	15 sq. ft. per place	UGC
(2) for next 20 students (or part)	12 sq. ft. per place	UGC
(3) for remainder	10 sq. ft. per place	UGC
Lecture rooms, flat (maximum number of places 100) :		
30-50 places		
Individual tables 2 ft. x 1 ft. 9 ins.	20 sq. ft. per place	
50-100 places		
(1) Close seating, chairs only	10 sq. ft. per place	
(2) Open seating with writing arms	12 sq. ft. per place	
Seminar rooms (maximum number of places 30) :		
Open seating with some tables	20 sq. ft. per place	UGC
Small study rooms :		
For individual study or practice with instruments or equipment	100 sq. ft.	
Reading rooms		
	25 sq. ft. per place	UGC
Departmental libraries		
Reading space	25 sq. ft. per place	UGC
Open access bookshelf area, including gangways	60 sq. ft. 1,000 books*	UGC
Closed access bookshelf area, including gangways	35 sq. ft. 1,000 books*	UGC
*assumes 7 shelves high		
2 Teaching laboratories		
Elementary or intermediate		
1st and 2nd year honours and general	50 sq. ft. per place	UGC
Final year honours and research		
Needs are variable and higher figures may be justified in certain cases		
	60 sq. ft. per place	UGC
Stores and preparation rooms only	15% of laboratory area	UGC
Other teaching or research ancillaries	20% of laboratory area	UGC
Advanced or individual research		
Quantum meruit about	120 sq. ft. per place	UGC
Note: The addition of service facilities to the nett provision may give a gross area per person of 250 sq. ft. per place.		

3 Teaching drawing offices

Elementary and intermediate drawing office		
4 ft. x 2 ft. 6 in. tables with imperial boards and some layout space	30 sq. ft. per place	UGC
Advanced drawing office		
8 ft. x 3 ft. with double elephant boards and some layout space	50 sq. ft. per place	UGC

4 Research rooms

Variable requirements		
Individual research lab. /staff room		
	about 250 sq. ft. per place	

5 Academic staff rooms

(e) Professor or heads room	200 sq. ft.	UGC
(f) Reader or senior lecturer's room	150 sq. ft.	UGC
(g) Teaching staff office room		
(one for each member of the staff)	100 sq. ft.	UGC

6 Service rooms

Staff common rooms	150 sq. ft. minimum	
or 9 sq. ft. for each member of the staff		
Student common rooms	250 sq. ft. minimum	
or 6 sq. ft. for each 'special studies' student		

Offices

Professors secretary	100 sq. ft.	
(large departments may need a second room for filing or duplicating)		
Secretarial and clerical staff	50 sq. ft. per person	

7 Circulation, cloakrooms, lavatories, ancillary space and allowance for internal partitions

Arts, Technology departments generally	36% of nett area	UGC
Science departments generally	60% of nett area	UGC
Medical departments generally	36-60% of nett area	UGC

Table 107T2: List of departments in the University of Leeds

*Forecast Schedules of accommodation are included in this report for these departments

Faculty of Arts

Greek Language and Literature
Latin Language and Literature
Semitic Languages and Literatures
English Literature
English Language and Medieval English Literature
French Language and Literature
Italian Language and Literature
German Language and Literature
Russian Language and Literature
Spanish and Portuguese Languages and Literatures
History (Medieval)
History (Modern)
Philosophy
Geography
*Music
Theology
*Education
Phonetics
*Psychology
Fine Art
Architecture

Faculty of Economics and Social Studies

*Economics and Commerce
*Social Studies

Faculty of Law

*Law

Faculty of Science

*Mathematics
*Mathematics Electronic Computing Laboratory
*Physics
School of Chemistry
*Zoology
*Botany
*Geology
Biomolecular Structure

Faculty of Technology

Civil Engineering
Mechanical Engineering
Electrical Engineering
Mining
Houldsworth School of Applied Science
Textile Industries
*Colour Chemistry and Dyeing
*Leather Industries
Agriculture

Faculty of Medicine

*Anatomy
*Physiology
*Biochemistry
*Pharmacology
*Pathology
*Chemical Pathology
*Bacteriology
*Experimental Pathology and Cancer Research
*Medicine
*Paediatrics and Child Health
*Psychiatry
*Surgery
*Urological Surgery
*Anaesthetics
*Obstetrics and Gynaecology
*Radiology
*Medical Physics
*Preventive Medicine and Public Health
*Forensic Medicine
School of Dentistry

Other Departments

*Institute of Education
*Adult Education and Extra-Mural Studies
The Brotherton Library
The Student Health Service
*Physical Education
Vice-Chancellor
Registrar
Bursar
Resident Architect and Planning Officer
Surveyor of the Fabric
The University Appointments Board
Photographer
The Tutor of Women Students
The Warden of Women Students in Lodgings
The Warden of Overseas Students
The Lodgings Warden
Officers Training Corps
The Womens Royal Army Corps
The University Air Squadron
*University House and Senior Common Room
*The Students Union

Arts

108T1: Music

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
1. General Teaching Spaces				
a Lecture Theatre	1	600	600	for 50. Space for Grand Piano
b Departmental Library	1	400	400	
2. Special Teaching Spaces				
a Concert Room	1	2,000	2,000	for 300
b Platform	1	960	960	for 40 players at 24 sq. ft. each
c Artists' Room	1	400	400	
d Changing Rooms	2	300	600	
e Instrument Room	1	400	400	
f Listening Rooms	1	300	300	Gramophone, Piano, Records, etc.
	1	200	200	
g Practice Rooms	6	150	900	
3. Academic Staff Rooms				
a Professor's Room	1	400	400	large enough to accommodate Grand Piano, Small Committees, Bookshelves and Desk
b Reader or Senior Lecturer	1	300	300	
c Teaching Staff Office Rooms	5	250	1,250	
4. Service Rooms				
a Staff Common Room	1	150	150	
b Offices	2	100	200	
c Service and Maintenance Room (including Workshops for Maintenance).	1	200	200	
Nett Total			9,260	
Plus				
36% for Circulation, Cloakrooms, Lavatories, and Ancillary Space			3,350	
Gross Total			12,610	

Arts

108T2: Education

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
1. General Teaching Spaces				
a Science Rooms	3	1,200	3,600	30 at 40 sq. ft. per place
b Preparation and Stores	2	200	400	
c Art and Craft Room	1	400	400	
d Reading Room	1	1,500	1,500	working collection of text books (for 250 students)
2. Academic Staff Rooms				
a Professor's Room	1	200	200	
b Rooms for Lecturing Staff	25	120	3,000	
3. Service Rooms				
a Staff Common Room	1	400	400	
b Professor's Secretary	1	100	100	
c General Office and Storage Space	3	400	1,200	
Nett Total			10,800	
Plus				
36% for Circulation, Cloakrooms, Lavatories, and Ancillary Space			3,890	
Gross Total			14,690	

Note: other accommodation will be shared with Institute of Education.

Arts

108T3: Psychology

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
1. General Teaching Spaces				
a Lecture Theatre	1	500	500	
b Preparation Room	1	100	100	
c Lecture Room	1	500	500	
d Seminar and Tutorial Rooms	5	300	1,500	
e Departmental Library	1	400	400	
2. Teaching Laboratories				
a Large	2	1,400	2,800	capable of subdivision:
b Small	8	250	2,000	Dark, Sound Proof
3. Research Rooms				
a General Research	1	250	250	Observation Room
	2	100	200	
4. Academic Staff Rooms				
a Professor's Room	1	200	200	
b Teaching Staff Office Rooms	6	120	720	
5. Service Rooms				
a Staff Common Room	1	150	150	
b Office	1	100	100	
c Service and Maintenance	3	100	300	
d Drawing Office	1	100	100	for use of Technicians
e Store Rooms	2	100	200	
Nett Total			10,020	
Plus				
36% for Circulation, Cloakrooms, Lavatories, and Ancillary Space			3,610	
Gross Total			13,630	

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Economics & Social Studies

109T1: Economics and Commerce

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
1. General Teaching Spaces				
a Lecture Theatre	1	2,500	2,500	for 250
b Lecture Rooms	2	1,000	2,000	for 100
	3	600	1,800	for 30
c Seminar and Tutorial Rooms	8	150	1,200	for 10
	4	450	1,800	for 30
d Departmental Library	1	2,000	2,000	shared with Social Studies
e Reading Rooms	2	600	1,200	
f Museum and Display Room	1	500	500	
2. Teaching Laboratory	1	800	800	
3. Research Rooms				
a Research and Post-graduate Student Rooms	15	100	1,500	
4. Academic Staff Rooms				
a Professors' Rooms	5	200	1,000	
b Teaching Staff Office Rooms	30	120	3,600	
5. Service Rooms				
a Staff Common Room	1	600	600	
b Students' Common Rooms	1	500	500	
	2	400	800	
c Offices	1	400	400	
	1	200	200	
	1	100	100	
Nett Total			22,500	
Plus				
36% for Circulation, Cloakrooms, Lavatories, and Ancillary Space			8,116	
Gross Total			30,616	

Economics & Social Studies

109T2: Social Studies

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
1. General Teaching Spaces				
a Lecture Theatre	1	1,500	1,500	for 150
b Lecture Rooms	2	1,000	2,000	for 50
c Seminar and Tutorial Rooms	5	250	1,250	15 students
d Departmental Library				shared with Economics
2. Teaching Laboratories				
a Computing Room	1	500	500	shared with Economics
3. Research Rooms				
a Research and Post-graduate Student Rooms			1,000	Estimate
4. Academic Staff Rooms				
a Professor's Room	1	200	200	
b Teaching Staff Office Rooms	11	120	1,320	
5. Service Rooms				
a Staff Common Room	1	150	150	
b Students' Common Room	1	540	540	
c Offices: Professor's Secretary	1	100	100	
General Office	1	100	100	
Nett Total			8,660	
Plus				
36% for Circulation, Cloakrooms, Lavatories, and Ancillary Space			3,120	
Gross Total			11,780	

Law

109T3: Law

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
1. General Teaching Spaces				
a Lecture Rooms	1	1,000	1,000	for 100
	2	600	1,200	for 60
	1	600	600	for 60
b Seminar and Tutorial Rooms	1	450	450	for 30
	1	225	225	for 15
c Departmental Library	1	1,500	1,500	
d Reading Room	1	300	300	
e Graduates Room	1	300	300	
2. Special Teaching Spaces				
a Moot Room	1	600	600	
3. Academic Staff Rooms				
a Professors' Rooms	2	200	400	
b Reader or Senior Lecturer	2	150	300	
c Teaching Staff Office Rooms	7	100	700	
4. Service Rooms				
a Staff Common Room	1	150	150	
b Students' Common Room	1	960	960	
c Offices	2	100	200	
Nett Total			8,885	
Plus				
36% for Circulation, Cloakrooms, Lavatories, and Ancillary Space			3,200	
Gross Total			12,085	

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Science

110T1: Mathematics
(not including Electronic Computing Laboratory)

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
1. General Teaching Spaces				
a Lecture Rooms	2	600	1,200	for 60
	1	700	700	
	16	1,200	19,200	
b Seminar and Tutorial Rooms	2	450	900	
c Departmental Library	1	800	800	
2. Teaching Laboratories				
a Teaching Laboratories	1	200	200	
	2	800	1,600	
3. Academic Staff Rooms				
a Professors' Rooms	3	200	600	
b Readers and Senior Lecturers	8	150	1,200	
c Teaching Staff Office Rooms	40	100	4,000	
d Research Staff Offices	6	200	1,200	
4. Service Rooms				
a Staff Common Room	1	750	750	
b Students' Common Room	1	500	500	
c Offices	4	150	600	
d Maintenance Room	1	150	150	
Nett Total			33,600	
Plus				
36% for Circulation, Cloakrooms, Lavatories, and Ancillary Space			12,100	
Gross Total			45,700	

Science

110T2: Mathematics, Electronic Computing Laboratory

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
1. General Teaching Spaces				
a Lecture Room	1	1,200	1,200	
b Departmental Library	1	500	500	
c Computer Room	1	1,500	1,500	
d Ancillary Rooms	8		2,250	of various sizes
2. Academic Staff Rooms				
a Head of Department	1	200	200	
b Senior Academic Staff	2	150	300	
c Lecturers	2	100	200	
d Research Fellows	2	200	400	
e Research Students	3	200	600	2 per room
f Diploma Students	1	500	500	10 to share 1 room
g Senior Computing Assistants	2	100	200	
h Computing Assistants	2	150	300	2 to share a room
i Visitors	1	400	400	
3. Service Rooms				
a Secretary and Records	1	150	150	
b Machine operators	3	150	450	
c Engineers	2	200	400	4 on two shifts
d Kitchen	1	150	150	
Nett Total			9,700	
Plus				
36% for Circulation, Cloakrooms, Lavatories, and Ancillary Space			3,500	
Gross Total			13,200	

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Science

111T1: Physics

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
1. General Teaching Spaces				
a Lecture Theatres	5	1,000	5,000	
b Lecture Rooms	2	500	1,000	
c Seminar and tutorial rooms	1	400	400	
	2	250	500	
d Departmental Library and study room	1	1,500	1,500	
2. Teaching Laboratories				
a S.1. Laboratory	1	3,500	3,500	each for 100 students with some diversity
b S.2. and S.3. Laboratories	2	6,000	12,000	
c Intro. Laboratory	1	2,500	2,500	
d Laboratory for G.1. G.2. G.3.	1	9,500	9,500	for 235 students in four groups for 475 at 40 sq. ft. per place with an average diversity of 2
3. Research Rooms				
a Post-graduate Research	40	100	4,000	
	35	300	10,500	
b Staff Research Rooms	60	300	18,000	
4. Academic Staff Rooms				
a Professors' Rooms	4	200	800	
b Academic Staff	62	120	7,440	
c Visiting Staff	5	120	600	
d Supt. of Laboratories, Secretaries, General Office, etc.			1,000	
5. Service Rooms				
a Workshops, Stores, etc.			10,500	
b Functional Stores			9,000	
c Staff Common Room	1	1,000	1,000	
d Technicians' Common Room	1	500	500	
e Students' Common Room	1	1,000	1,000	
Nett Total			100,240	
Plus				
60% for Circulation, Cloakrooms, Lavatories, and Ancillary Space			60,144	
Gross Total			160,384	

Science

111T2: Zoology

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
1. General Teaching Spaces				
a Lecture Theatres	1	2,500	2,500	for 200-250 for 50-75 for 30
	1	750	750	
b Seminar and Tutorial Room	1	500	500	
c Museum and Display Room	1	2,000	2,000	
2. Teaching Laboratories				
a Elementary Laboratory	1	3,500	3,500	for 90
b Preparation Room	1	350	350	
c Service Room	1	300	300	
d Store	1	150	150	
e Advanced Laboratory	1	3,000	3,000	for 50
f Advanced Laboratory	1	2,400	2,400	for 40
g Advanced Laboratory	1	1,000	1,000	for 10-15 (4th yr. S.S.)
h Physiology Laboratory	1	2,000	2,000	for 25
i Preparation Room	1	450	450	
j Service Room	1	400	400	
k Store	1	450	450	
3. Research Rooms				
a Estimate of Area Required			6,000	
4. Academic Staff Rooms				
a Professor's Room	1	200	200	
b Readers and Senior Lecturers	4	150	600	
c Lecturers	10	100	1,000	
5. Service Rooms				
a Staff Common Room	1	300	300	10 + Staff including Library
b Students' Common Room	1	500	500	
c Offices	1	100	100	
d Chief Technician's Room and Workshop	1	750	750	
e Animal House	1	500	500	
f Aquarium	1	500	500	
g Laboratory Staff Room	1	200	200	8 + Staff
Nett Total			30,400	
Plus				
60% for Circulation, Cloakrooms, Lavatories, and Ancillary Space			18,200	
Gross Total			48,600	

Science

111T3: Botany

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
1. General Teaching Spaces				
a Lecture Theatre	1	2,000	2,000	for 200
b Ancillary	1	200	200	
c Lecture Theatre	1	1,000	1,000	
d Ancillary	1	200	200	for 100
e Seminar Rooms	1	750	750	
	2	200	400	
f Departmental Library	1	500	500	
g Herbarium	1	750	750	
2. Teaching Laboratories				
a Elementary Laboratory	1	3,600	3,600	
b Ancillary	1	900	900	
c Advanced Laboratory	1	3,600	3,600	
d Ancillary		900	900	
e Final Year Special Studies Laboratory	1	1,200	1,200	
f Ancillary	1	240	240	
3. Research Rooms				
a Professors' Laboratories	2	400	800	
b Post-graduate Laboratories	2	600	1,200	
c Staff Laboratories	7	250	1,750	
d Biochemistry Research	1	800	800	
e Ancillary	3	200	600	
f Special Laboratories and Research Rooms			5,200	
4. Academic Staff Rooms				
a Professors' Rooms	2	200	400	
b Staff Rooms	13	120	1,560	
5. Service Rooms				
a Technicians' Rooms	2	100	200	
b Print Processing Room	1	200	200	
c Service Rooms for Research	3	100	300	
d Stewards	2	150	300	
e Offices	2	100	200	
f Common Room	1	750	750	
g Store, Central	1	600	600	
h Store, Inflammable	1	1,000	1,000	
i Workshop	1	600	600	
j Greenhouse	1	1,000	1,000	
k Garage	1	200	200	
Nett Total			34,200	
Plus				
60% for Circulation, Cloakrooms, Lavatories, and Ancillary Space			20,600	
Gross Total			54,800	

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Science

112T1: Geology

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
1. General Teaching Spaces				
a Lecture Theatre	1	2,000	2,000	for 200
b Preparation Room	1	300	300	
c Lecture Room	1	1,000	1,000	for 50
d Preparation Room	1	300	300	shared with Laboratory
e Departmental Library	1	1,000	1,000	
f Map Room	1	400	400	
g Reading Room	1	200	200	
h Museum and Display Room	1	1,200	1,200	
i Collection Room for Rocks	1	600	600	
j Collection Room for Mineralogy	1	400	400	
k Collection Room for Palaeontology	1	400	400	
2. Teaching Laboratories				
a Introductory Laboratories	2	2,400	4,800	each for 60 at 40 sq. ft. per place
b Preparation Room	1	300	300	
c Mineralogy and Petrography Laboratory	1	1,200	1,200	for 30 at 40 sq. ft. per place
d Store	1	100	100	
e Palaeontology Laboratory	1	1,200	1,200	for 30 at 40 sq. ft. per place
f Store	1	100	100	
g Stratigraphy Laboratory	1	1,200	1,200	for 30 at 40 sq. ft. per place
h General Chemical Laboratory	1	1,200	1,200	for 30 at 40 sq. ft. per place for rock and mineral analysis and identification
i 2nd, 3rd, and Final Year Laboratory	1	1,200	1,200	for 30 at 40 sq. ft. per place
3. Research Rooms				
a Chemical Laboratory	1	1,120	1,120	for 8 at 140 sq. ft. per place
b Physical Chemical Analysis	1	700	700	
c Balance Room	1	100	100	
d Record Office	1	100	100	
e X-ray Laboratory	1	560	560	
f Preparation Room/Office	1	100	100	
g Dark Room	1	100	100	
h Spectrograph Laboratory	1	560	560	with dark-room facilities
i Micro-photometer Room	1	250	250	
j Electrode Preparation Room	1	100	100	
k Optical Room	1	560	560	for Post-doctoral Research
l High Temperature Laboratory	1	560	560	for Igneous Studies
m Low Temperature Laboratory	1	560	560	for Sedimentary Studies
n General Post-graduate Research Laboratory	1	560	560	
o Study Rooms for Post-graduate students	5	400	2,000	
p Optical Laboratory	1	2,100	2,100	for 15 at 140 sq. ft. per place
q Dark Room	1	100	100	
r Drawing Office	1	450	450	for 15 at 30 sq. ft. per place
4. Academic Staff Rooms				
a Professor's Room	1	200	200	
b Professor's Laboratory	1	250	250	
c Rooms for Lecturing Staff	10	250	2,500	including Research Accommodation

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
5. Service Rooms				
a Staff Common Room	1	150	150	
b Technical Staff Room	1	150	150	
c Professor's Secretary's Room	1	200	200	
d General Office/Duplicating/Stationery Room	1	400	400	
e Rock Cutting and Machine Room	1	500	500	
f Mechanical Workshop	1	1,000	1,000	
g Garage	1	300	300	
h Stores and Unpacking Room	1	300	300	
i Rock Crushing Room	1	300	300	
j Sieve Shaker, Acid and Spirit Store	1	300	300	
Nett Total			36,230	
Plus				
60% for Circulation, Cloakrooms, Lavatories, and Ancillary Space			21,800	
Gross Total			58,030	

Technology

112T2: Colour Chemistry and Dyeing

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
1. General Teaching Spaces				
a Lecture Theatre	1	900	900	for 90
b Lecture Room	1	600	600	
c Departmental Library	1	600	600	
2. Teaching Laboratories				
a Colour Chemistry Laboratories	4	600	2,400	for 12 at 50 sq. ft. per place
b Dyeing Laboratory	1	2,160	2,160	for 36 at 60 sq. ft. per place
c Dyehouse	1	600	600	
3. Research Rooms				
a Research Laboratory/Staff Rooms	8	250	2,000	
b Research Laboratory/Post-graduate Student Rooms	8	250	2,000	
4. Academic Staff Rooms				
a Professor's Room	1	200	200	
b Teaching Staff Office Rooms	6	120	720	
5. Service Rooms				
a Staff Common Room	1	150	150	
b Students' Common Room	1	550	550	
c Office	1	100	100	
d Stores	2	300	600	
e Workshop	1	400	400	
f Humidity Rooms	2	500	1,000	
g Dye Store	1	100	100	
Nett Total			15,080	
Plus				
60% for Circulation, Cloakrooms, Lavatories, and Ancillary Space			9,050	
Gross Total			24,130	

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Technology

113T1: Leather Industries

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
1. General Teaching Spaces				
a Lecture Theatre	1	600	600	
b Lecture Room	1	600	600	for 20
c Seminar and Tutorial Room	1	400	400	
d Departmental Library	1	750	750	for 25
e Librarian's Office	1	100	100	
2. Teaching Laboratories				
a Analytical Laboratory	1	900	900	for 15 at 60 sq. ft. per place
b Balance Room	1	300	300	for 8
c Preparation Room and Store	1	300	300	
d Physics and Microscopy Laboratory	1	900	900	for 15
3. Research Rooms				
a Physics	1	450	450	for 3
b Humidity Room and Testing	1	450	450	for 3
c Physical Chemistry	1	450	450	for 3
d Instrument Room	1	200	200	
e Electron Microscopy	1	250	250	for 3
f Preparation Room	1	450	450	
g Dark Room	1	100	100	
h Microscopy and Bacteriology	1	450	450	for 3
i Dark Room	1	100	100	for 3
j Protein Laboratory	1	500	500	for 3
k Organic Chemistry	1	500	500	for 3
l Chromatography	1	100	100	
m Experimental Tannery	1	5,500	5,500	
n Control Laboratory	1	250	250	for 2
o Research Laboratory	1	1,200	1,200	for 10 final year students.
p Solvent and Acid Stores	2	60	120	
q Apparatus Store	1	250	250	
4. Academic Staff Rooms				
a Professor's Room	1	200	200	
b Reader or Senior Lecturer	1	150	150	
c Teaching Staff Office Rooms	5	100	500	
d Senior Technician's Office	1	100	100	
5. Service Rooms				
a Staff Common Room	1	200	200	
b Students' Common Room	1	550	550	
c Non-academic Staff Room	1	200	200	
d Office	1	150	150	
e Service and Maintenance Room (including Workshops for Maintenance)	1	400	400	for 2
Nett Total			18,620	
Plus				
60% for Circulation, Cloakrooms, Lavatories, and Ancillary Space			11,170	
Gross Total			29,790	

113T2: Institute of Education (not including Children's Centre)

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
1. General Teaching Spaces				
a General Purposes Laboratory	1	1,200	1,200	30 at 40 sq. ft. per place
b Psychology Laboratory	1	1,200	1,200	30 at 40 sq. ft. per place
c Preparation Room	1	240	240	
2. Academic Staff Rooms				
a Lecturers' Rooms	11	250	2,750	used for Seminar Teaching
b Visiting Professor's Room	1	250	250	used for Seminar Teaching
c Lecturers' Rooms	2	120	240	
d Senior Research Fellows' Rooms	2	120	240	
3. Administration				
a Director	1	200	200	
b Deputy Director	1	200	200	
c Secretary to the Institute	1	150	150	
4. Service Rooms				
a Secretaries' Rooms to above	3	100	300	
b Administrative Assistants	3	100	300	
c General Administration Offices	1	700	700	to accommodate 17 clerks
	1	500	500	
	1	400	400	
	1	800	800	
d Committee Rooms	1	500	500	
	1	300	300	
e Duplicating Room	1	300	300	
f Examination Records	1	600	600	
g Stationery	1	300	300	
h General Records and Publications	1	500	500	
i Teaching Apparatus Storage			800	
j Staff Common Room	1	400	400	
k Common Room and Private Study Rooms			3,000	for 140 Accommodation for Training College Lecturers and School Teachers on Full-time Secondment to Institute Courses.
Nett Total			16,370	
Plus				
36% for Circulation, Cloakrooms, Lavatories, and Ancillary Space			5,900	
Gross Total			22,270	

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113T3: Institute of Education, Children's Centre

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
a Play Rooms	1	750	750	for 40 children
	1	400	400	for 20 children
b Observation Room	1	350	350	
c Class Rooms	2	400	800	for 20 children
d Observation Room	1	300	300	
e Seminar rooms	4	150	600	
f Individual Study Rooms	4	100	400	for the Treatment of Backward Children.
g Store Room	1	150	150	
h Art and Craft Room	1	400	400	
i General Purposes Room	1	1,000	1,000	for Music, Gymnastics, etc.
j Staff Rooms	3	120	360	
Nett Total			5,510	
Plus				
36% for Circulation, Cloakrooms, Lavatories, and Ancillary Space.			1,980	
Gross Total			7,490	

113T4: Institute of Education and Department of Education (shared accommodation)

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
1. General Teaching Spaces				
a Lecture Rooms	1	500	500	for 50
	1	2,500	2,500	for 250
	1	1,500	1,500	for 150
	1	800	800	for 80
b Class Room	1	600	600	for 30
c Demonstration Class Rooms	6	600	3,600	for 30
d Library	1		9,000	
e Museum	1		1,500	
Nett Total			20,000	
Plus				
36% for Circulation, Cloakrooms, Lavatories and Ancillary Space			7,200	
Gross Total			27,200	

114T1: Adult Education and Extra-Mural Studies

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
1. General Teaching Spaces				
a Lecture Room	1	1,500	1,500	for 150
b Seminar Rooms	1	800	800	for 40
	2	600	1,200	for 30
	2	250	500	for 15
c Departmental Libraries	1	1,800	1,800	for 30 (17,500 books)
	1	200	200	
	1	120	120	
2. Administration				
a Director	1	200	200	
b Deputy Director	1	200	200	
c Assistant Director	1	150	150	
d Administrative Assistants	2	150	300	
e Teaching Staff Rooms	4	100	400	
f Secretaries to each Officer	5	100	500	
g General Office	1	150	150	
h Duplicating Room	1	100	100	
i Science Materials Room	1	150	150	
3. Hospital Administration				
a Director	1	150	150	
b Assistant	1	100	100	
c Clerk	1	150	150	
4. Common Room Accommodation				
a Staff Common Room	1	100	100	for 6
b Students' Common Room	1	300	300	for 30
c Music Room	1	750	750	
d Refectory	1	750	750	for 50
e Kitchen	1	250	250	
f Stores	4	25	100	
Nett Total			10,920	
Plus				
36% for Circulation, Cloakrooms, Lavatories, and Ancillary Space.				
			3,930	
Gross Total			14,850	

114T2: Brotherton Library Extension and New Building

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
1. Joint Entrance Hall				
a Index system for both libraries			650	(1,000,000 volumes)
b Counter for issue and return of books.			4,550	
c Sub-librarian	1	200	200	
d Assistant Librarians	2	150	300	
e Assistants' Room	1	200	200	for 2
2. Cloakrooms				
a Cloakroom for both Libraries	1	6,800	6,800	for 1,700
b WC's male	1	1,000	1,000	
c WC's female	1	1,000	1,000	
3. Entrance to New Library				
a Librarian's Room	1	400	400	
b Secretarial Room	1	150	150	
c Small Office	1	150	150	
d Deputy Librarian's Room	1	150	150	
4. Acquisitions Department				
a Assistant Librarians' Enclosure	1	200	200	for 2
b Clerical Assistants' Room	1	150	150	for 3
c Book Storage	1	100	100	
5. Cataloguing Department				
a Sub-librarian	1	150	150	
b Assistant Librarians' Enclosure	1	800	800	for 8
c Clerical Assistants' Room	1	100	100	for 3
d Book Storage Room	1	300	300	
e Bookbinding Room	1	500	500	
6. Documentary Photography				
a Studio	1	1,500	1,500	
b Darkrooms	5	100	500	
7. Staff				
a Staff Rest Rooms	2	500	1,000	one male and one female
b Staff WC's	2	100	200	one male and one female

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
8. Public Rooms				
a Contemporary Literature Room	1	2,500	2,500	(10,000 books)
b Special Collection Rooms	25	350	8,750	
c Periodical Room	1	3,600	3,600	100 at 36 sq. ft. per place
d Reading Room	1	14,000	14,000	460 at 30 sq. ft. per place
e General Reading Room	1	7,500	7,500	250 seats at 30 sq. ft per reader.
f Gramophone Audition Rooms	4	250	1,000	
g Record Storage	1	300	300	
h Public Lavatories				
male	1	200	200	total of 8 WC's 10 urinals, 25 lavatory basins.
female	1	200	200	total of 10 WC's 15 lavatory basins.
Nett Total			59,100	
Plus				
30% for Circulation and Ancillary Space				
			17,800	
Gross Total			76,900	
9. Stack				
a Book Storage	4	5,292	21,168	shelves for 400,000 Books, Gangways, and General Circulation.
b Floor Index and Assistant	4	90	360	
c Carrels and Studies	180	25	4,500	45 on each floor
d WC's male and female	2	200	400	
e Vertical Circulation			500	2 stairs, lift, circulation
Gross Total of Stack			26,928	
Gross Total of Whole Library			103,828	

The above schedules have been prepared on the basis of stated needs modified according to known University Grants Committee space standards and other considerations referred to in this report. It is important to recognise that these forecast schedules are only preliminary; they should be reconsidered and, where necessary, revised in the light of more detailed studies of the departments needs.

115T1: Physical Education Centre

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
1. Main Spaces				
a Central Floor			20,000	
b Bleachers				
c Board Running Track				
d Circuit Training Room	1		4,000	50 ft. x 40 ft.
e Athletics Pits and Nets				50 ft. x 40 ft.
f Experimental Gymnasium	1	1,600	1,600	
g Small Gymnasium	1		2,750	60 ft. x 40 ft. + 350 sq. ft. store
h Games Gymnasium	1	3,850	3,850	70 ft. x 50 ft. + 350 sq. ft. store
i Judo Room	1	1,600	1,600	40 ft. x 40 ft.
j Table Tennis Rooms	1	600	600	
k Squash Courts	6	672	4,032	32 ft. x 21 ft.
l Swimming Pool	1			70 ft. x 36 ft.
m Shallow Pool	1		5,450	30 ft. x 25 ft.
n Seating				for 200 at 10 sq. ft. per place
o Dressing Rooms				
p Showers			7,500	
q Locker Room				
r Camp and Boat Store	1	1,500	1,500	50 ft. x 30 ft.
s Rowing Tank	1	1,500	1,500	36 ft. x 40 ft.
2. General Teaching Spaces				
a Lecture Rooms	2	500	1,000	each for 50
b Library	1	300	300	
3. Service Rooms				
a Offices and Staff Rooms			600	Director and Staff
b Spectators' Cloakroom			200	
c Cleaners' Stores			250	
d Chlorinating and Heating Plant			1,500	
e First Aid Room	1	250	250	
f Caretaker's Flat	1	800	800	
Nett Total			60,782	
Plus				
16% for Circulation, Cloakrooms, Lavatories, and Ancillary Space			9,700	
Gross Total			70,482	

The above schedules have been prepared on the basis of stated needs modified according to known University Grants Committee space standards and other considerations referred to in this report. It is important to recognise that these forecast schedules are only preliminary; they should be reconsidered and, where necessary, revised in the light of more detailed studies of the departments needs.

115T2: Senior Common Room

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
1. Public Rooms				
a Large Common Room	1	3,600	3,600	for 120
b Common Rooms	1	1,800	1,800	for 60
	2	900	1,800	for 30
c Sitting Rooms	2	450	900	for 15
d Reading Room	1	1,800	1,800	for 60
e Library	1	1,000	1,000	
2. Recreation Rooms				
a Card and Chess Room	1	600	600	for 6 tables
b Billiards Room	1	1,250	1,250	for 2 full-size tables
c Music Rooms	2	800	1,600	one for music making, one for music listening
d Wireless and Television Room	1	500	500	
e Table Tennis Room	1	800	800	for 2 tables
3. Dining Rooms				
a Main Dining Room	1	3,600	3,600	divisible into two-room accommodation, 180 and 60, total of 240 for 30
b Dining Rooms	1	450	450	for 15
	2	300	600	
c Bar	1	1,000	1,000	
4. Kitchen				
a Main Kitchen	1	1,800	1,800	at 50% of dining room area
b Vegetable Store	1	100	100	
c Groceries and Dry Goods Store	1	100	100	
d Crockery Store	1	100	100	
e Cold Room with Deep Freeze	1	100	100	
f Larder	1	100	100	
g Wine Cellar and Beer Store	1	300	300	
5. Administration				
a Manageress	1	200	200	
b Chairman, Treasurer and 2 Secretaries	1	300	300	
c General Office	1	200	200	
d Private Sitting Room	1	300	300	
e Housekeeper's Room	1	100	100	
f Laundry Store	1	60	60	
g Domestic Staff Rest Room	1	500	500	
6. Residential				
a Manageress's Flat	1	900	900	
b Assistant Manageress's Flat	1	600	600	
c Bed-sitting Room	1	150	150	
Nett Total			27,210	
Plus				
36% for Circulation, Cloakroom and Lavatory and Shower Bath Accommodation, and Ancillary Spaces			9,800	
Gross Total			37,010	

Footnote: The above schedule is based upon a membership of 1,000, and if the number of staff is likely to increase substantially above this figure the schedule will require some revision. An approximate estimate of the increase in area has been made for the purpose of estimating the cost of the building.

115T3: Students' Union Extension

Description of area	No. of rooms	Area in sq. ft.	Total area in sq. ft.	Notes
1. Public Rooms				
a Library	1	4,250	4,250	
b Book exchange	1	500	500	
c Reading and Writing Room	1	1,350	1,350	
d Billiards Room	1	3,750	3,750	
e Lounges	1	3,000	3,000	
	1	1,000	1 000	
f Bar	1	1,500	1,500	
g Cinema	1	2,500	2,500	
h Music Rooms	2	300	600	
i Debating Chamber	1	3,000	3,000	
j Societies Room	1	900	900	
k Bridge/Chess Room	1	600	600	
l Card Room	1	900	900	
m Sub-committee Offices	8	100	800	
n Meeting Rooms	1	2,100	2,100	
	3	1,500	4,500	
o Committee/Meeting Rooms	6	400	2,400	
p Scenery Room and Workshops	1	2,000	2,000	
2. Administration				
a Furniture Store	1	900	900	
b Rooms for Cloaks, Lockers, Lavatories, Baths and Showers			10,000	
c Drying Room	1	200	200	
d Sewing Room	1	300	300	
e Laundry	1	300	300	
f Ironing Room	1	200	200	
g Porter's Office	1	400	400	
h Staff Rest Rooms	2	200	400	

Nett Total 48,350

Plus
30% for Circulation and Ancillary Space 14,500

Gross Total 62,850

Footnote

- This schedule will probably require amendment in the light of the expected increase in the number of students above the figure of 5,600 on which it was based.
- Other factors to be taken into consideration in designing the extension include the alterations which may be made to University House, which adjoins the Union Building, and the facilities to be provided in Halls of Residence being planned immediately adjacent to the Union.
- It is expected that extra space for Union administration will be created within the existing Union Building when the extension is made.

116T1: Medical School

	Pre-Clinical Departments						Clinical Sciences Departments						Clinical Departments											Total																
	Anatomy		Physiology		Biochemistry		Pharmacology		Pathology		Chemical Pathology		Bacteriology		Experimental Pathology and Cancer Research		Medicine		Paediatrics and Child Care		Psychiatry		Surgery			Urological Surgery		Anaesthetics		Obstetrics and Gynaecology		Radiology		Medical Physics		Preventative Medicine and Public Health		Forensic Medicine		
Teaching																																								
Lecture Theatres	1	1,600	1	2,000	1	2,000	1	1,000	1	1,000	1	750	1	2,500			1	800			1	600	1	800			1	800	1	1,500	1	600	1	600	1	1,000	1	750	34,060	Teaching Lecture Theatres
			1	750	1	500	1	300					1	600			1	1,500					1	1,500										2	900					
Ancillary	2	700	1	150	2	400							1	60			3	600					1	3,500																
Laboratories: Medical	2	8,000	1	4,800	2	1,200	1	2,000	1	2,000	1	750	1	2,250			1	2,400											1	500					3	600	64,355	Laboratories: Medical		
	1	3,000	4	1,800				1	600								1	500																						
Ancillary	1	1,000																																						
	2	800	2	480	5	1,000					1	200	1	300																										
	2	600																																						
Tutorial Rooms: Medical	1	1,100	2	400	2	1,200		1	600	1	500						4	4,000			2	950	2	1,800			1	525		1	300	2	200	1	400		Tutorial Rooms: Medical			
																	2	4,800					1	2,000																
Laboratories: Science	1	400	1	2,000	3	5,100	3	3,000					1	1,250																										
	1	300					1	1,700																																
Ancillary			1	240	3	720	1	950																																
Tutorial Rooms: Science	1	800					1	1,500					1	200																						20,010	Ancillary Tutorial Rooms: Science			
							2	750																																
Research																																								
Professor's Laboratory	1	450			1	550					1	200	1	200	1	800	2	400			1	200	2	400			1	500	1	250				1	200	1	400	99,890	Research Professor's Laboratory Research Lab./ Staff Room Senior and P.G. Research Lab. Special Project Research Lab.	
Research Lab./ Staff Room	13	3,450	15	6,400	12	6,600	10	2,500	12	4,800	4	800	7	1,050	10	6,000	9	7,350	1	250	4	600	12	7,000			3	900					3	450	3	1,200				
Senior and P.G. Research Lab.					13	5,750	10	1,800			4	880	2	1,800			14				1	150	8																	
Special Project Research Lab.	1	1,200			18	6,000	1	750					1	2,500							2	400					1	1,000	4	1,000		1,000		11,000	1	150				
							2	330			2	800	1	250	3	1,800					2	150																		
Others					1	200	1	250					1	200							1	200																		
							13	2,740																																
Administration																																								
Professor's Room	1	200	1	200	1	250	1	250	1	200	1	200	1	200	1	200	2	400	1	200	1	200	2	400	1	200	1	200	1	200				1	200	1	200	32,910	Administration Professor's Room Offices Staff Rooms Technician's Room Store Rooms Others	
Offices	1	150	1	300	2	200			2	500	1	200	1	150	2	350	3	300	1	250	4	400	4	400	7	1,050	1	200	1	260			2	400	1	200	2		400	
Staff Rooms	1	150	11	1,400							1	400					15	1,800	5	650	14	2,450		1,800								8	1,200	2	200					
Technician's Room	1	300	1	200	3	300	2	350	2	600	1	300	1	200	3	800	6	600			2	200	2	400			1	100							2	600				
Store Rooms	4	1,200	2	1,500							1	400	1	550	1	800											1	100							1	100	3		900	
Others			2	200									2	1,400						1	100						1	200												
Service																																								
Staff Common Room	1		1	500			1	600				2	400	1	600			1	540	1	200	1	200	1	600				1	150			1	300			37,330	Service Staff Common Room Library Museum Dark Room and others Receiving Room Other Service Rooms		
Library					1	750			2	1,100				1	150			1	400			1	250				1	1,000	1	250		1	600	1	400	1		600		
Museum	1	2,400							3	4,600								1	400	1	420																			
Dark Room and others			2	1,300			1	60					1	200	1	300	1	200					1	125			1	200	1	250				1	2,000					
Receiving Room			1	400														1	200								1	200	1	250				1	200					
Other Service Rooms			2	700	8	3,200			1	1,100	2	270	10	1,420			1	300					1	125			1,200	1	500				4,000	2	400	2	600			
Hospital Services																																								
Staff Room													1	400								5	1,000					1	500	1	340		1	500			21,310	Hospital Services Staff Room Laboratories Technician's Room Store Rooms Special Rooms Others		
Laboratories																																								
Technician's Room																																								
Store Rooms																																								
Special Rooms																																								
Others																																								
Nett Area incl. all lecture rooms		27,000		26,520		46,720		21,080		22,200		13,650		18,280		11,600		30,830		2,840		7,950		22,600		6,390		6,800		8,085		1,600		18,600		6,270		10,850	309,865	Nett Area incl. all lecture rooms

Continuation of Summary of Medical School Accommodation (116T1)

		Nett area	Gross area
Non-Departmental Accommodation			
Other Departments			
Statistics	400		
Genetics	1,000		
Virology	7,000		
Illustration and Photography	1,200		
		9,600	15,000
Ward Unit Teaching Accommodation			
Senior Lecturers Room	1 150		
Laboratory for Lecturer	1 180		
Laboratories	2 330		
Tutorial Room	1 450		
	1,140		
10 Ward units × 1,140 sq.ft.		11,400	15,500
Animal Accommodation		23,960	32,600
Library			
Main Reading Room	1 3,000		
Stacks (60,000 vols.)	1 12,000		
Current Periodical Room	1 750		
Historical Collection	1 600		
Staff Reading Room	1 750		
Sub-Librarian Room	1 400		
Work Room	1 400		
Entrance, Counters and Administration	1 2,150		
		20,050	27,200
Central Administration			
Staff Common Room	1 600		
Boardroom	1 600		
Committee Room	1 2,400		
Student Locker Room	1 1,200		
Non-academic Staff			
Room	1 180		
Offices: Dean	1 300		
Sub-Dean	1 200		
Offices general	5 540		
	1 75		
Reception:			
Porter	1 150		
Switchboard	1 250		
Cleaners' Rooms	2 200		
	1 75		
Workshops			
Joinery	1 200		
Electrician and plumber	1 200		
Storerooms	2 100		
	1 120		
Refectory	1 4,000		
Staff Dining Room	1 600		
Kitchen	1 1,200		
Student Common Room	1 2,400		
Cleaners' Sitting Room	1 250		
		15,840	21,500
Total of Non-Departmental Medical Accommodation		80,850	111,800
Total of Departmental Medical Accommodation		309,865	421,000
Total of all Medical Accommodation	390,715	532,800	

Lecture Theatre Accommodation

It is estimated that if efficient use were made of lecture theatre accommodation, by sharing, the requirements of all departments could be met by the following provision

60 seats	1	600
80	7	5,600
150	1	1,500
200	2	4,000
350	1	3,500
Total		15,200
Ancillary areas at 10%		1,500

	16,700	22,700
Lecture Theatre Accommodation asked for	34,060	46,200
Revised Lecture Theatre Accommodation if shared	16,700	22,700
Area saved	17,360	23,500
Total of all Medical Accommodation	390,715	532,800
Area saved by sharing lecture theatres	17,360	23,500

Grand Total of Medical Accommodation	373,355	509,300
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Table 118T1: Existing lecture rooms and lecture theatres 1958

Type of Accommodation and Location	Present Seating Capacity												
	T = Tiered												F = Flat
	0-15	30	50	75	100	125	150	175	200	225	250	275	+
Baines Wing													
(a) General Lecture Theatre									T				
(b) Small Lecture Theatre			T										
(c) Engineering Lecture Theatre					T								
Leather Industries													
(a) Lecture Theatre		T											
Great Hall													
(a) Main Hall													F600
(b) Balcony								T					
(c) Stage					T								
Room 101					F								
Colour Chemistry and Dyeing													
(a) Lecture Theatre				T									
Textiles													
(a) Lecture Hall						T							
Room 134 (Latin classroom)			F										
Man-Made Fibres													
(a) Lecture Theatre 2							T						
(b) Lecture Theatre 3					T								
Geography													
(a) Lecture Theatre A					T								
(b) Lecture Theatre B			F										
Agriculture													
(a) Room 22			T										
(b) Room 29				F									
(c) Room 34				T									
(d) Room 49				T									
Law House													
(a) Lecture Theatre		F											
Mining													
(a) Small Lecture Theatre			F										
(b) Large Lecture Theatre					T								
Old Fuel Building													
(a) Lecture Theatre A				T									
(b) Lecture Theatre B				F									
Physics													
(a) Lecture Room 1									T				
(b) Lecture Room 2					T								
(c) Lecture Room 3			T										

Type of Accommodation and Location	Present Seating Capacity													F = Flat	
	T = Tiered														
	0-15	30	50	75	100	125	150	175	200	225	250	275	+		
Electrical Engineering Bdg.															
(a) Lecture Theatre						T									
Houldsworth School															
(a) Lecture Theatre A										T					
(b) Lecture Room B		F													
(c) Lecture Room C			F												
Chemistry															
(a) Lecture Theatre A										T					
(b) Lecture Theatre B						T									
(c) Lecture Theatre C				T											
(d) Lecture Theatre D							T								
Parkinson Building															
(a) Lecture Room B8					F										
(b) Lecture Room B21			F												
(c) Lecture Room B23		F													
(d) Lecture Room B25			F												
(e) Lecture Room 202			F												
(f) Lecture Room 213			F												
(g) Lecture Room 215			F												
(h) Lecture Room 216								T							
(i) Lecture Room 226								F							
(j) Lecture Room 238				F											
(k) Lecture Room 301								F							
(l) Lecture Room 304															
(m) Lecture Room 305			F												
(n) Lecture Room 306			F												
(o) Lecture Room 308				F											
(p) Lecture Room 310			F												
Beech Grove House															
(a) Lecture Room 1		F													
(b) Lecture Room 2		F													
History House															
(a) Lecture Room				F											
Philosophy															
(a) Beech Grove Terrace			F												
English Language															
(a) Virginia Road		F													
Economics and Social Studies															
(a) Lecture Room A		F													
(b) Lecture Room B		F													
(c) Lecture Room C		F													
Geology															
(a) Hillary Place Lecture Room				T											
Dental School															
(a) Lecture Theatre				T											
Inst. of Pathology															
(a) Lecture Theatre					T										

Type of Accommodation and Location	Present Seating Capacity													F = Flat
	T = Tiered													
	0-15	30	50	75	100	125	150	175	200	225	250	275	+	
Medical School														
(a) General Lecture Theatre						T								
(b) Physiology Lecture Theatre						T								
(c) Anatomy Lecture Theatre							T							
Inst. of Education														
Cavendish Rd.														
(a) Room 20			F											
(b) Room 23			F											
Summary														
Lecture Rooms	(Tiered)	—	2	4	6	8	4	3	1	2	2	—	—	
& Theatres	(Flat)	—	10	16	5	1	—	2	—	—	—	—	1	
Total		—	12	20	11	9	4	5	1	2	2	—	1	(for 600)

Table 118T2: New lecture rooms and lecture theatres 1958-1963

Chemistry. South Wing														
						F								
Physics Extension														
						F								
Dental School														
													T	
Geology														
(a) Lecture Theatre												T		
Arts Block Stage 1														
(a) Lecture Room B12						F								
(b) Lecture Room B14								F						
(c) Lecture Room LG17											F			
(d) Drama Lecture Room							F							
Arts Block Stage 2														
(a) Large Lecture Theatre														T.321
Arts Block Stage 3														
(a) Room 118									F					
(b) Room 119											F			
(c) Room 116								F						
(d) Room 115										F				
(e) Room 329						F								
(f) Room 333										F				
(g) Room 430							F							
(h) Room 436						F								

Type of Accommodation and Location	Seating Capacity												
	T - Tiered						F - Flat						
	0-15	30	50	75	100	125	150	175	200	225	250	275	+
North Block II Civil Eng. Dept.													
(a) Lecture Theatre 3rd Floor						T							
(b) Lecture Theatre 1st Floor									T				
(c) Lecture Room 1st Floor				F									
Mech. Eng. Dept.													
(a) Lecture Room 5th Floor					F								
(b) Lecture Theatre 2nd Floor									T				
(c) Lecture Theatre 2nd Floor			F										
(d) Lecture Theatre 1st Floor												T.302	
Elec. Eng. Dept.													
(a) Lecture Theatre 1st Floor									T				
(b) Lecture Theatre 3rd Floor					F								
(c) Lecture Room 3rd Floor				F									
Summary													
Lecture Rooms & Theatres	(Tiered)	—	—	—	—	—	1	1	—	3	—	1	2
	(Flat)	—	1	6	4	6	—	2	—	—	—	—	—
Total		—	1	6	4	6	1	3	—	3	—	1	2

Table 119T1: Summary of lecture rooms and lecture theatres in 1963

Date Available	Accommo- dation Type	Seating Capacity												
		0-15	30	50	75	100	125	150	175	200	225	250	275	+
1958	(Tiered)	—	2	4	6	8	4	3	1	2	2	—	—	—
(in use)	(Flat)	—	10	16	5	1	—	3	—	—	—	—	1(600)	—
1959	(Tiered)	—	—	—	—	—	—	—	—	—	—	—	—	—
	(Flat)	—	—	2	1	1	—	1	—	—	—	—	—	—
1960	(Tiered)	—	—	—	—	—	1	—	—	1	—	—	—	—
	(Flat)	—	—	—	1	—	—	1	—	—	—	—	—	—
1961	(Tiered)	—	—	—	—	—	—	—	—	1	—	—	2	(302)
	(Flat)	—	—	1	1	1	—	—	—	—	—	—	1	(321)
1962	(Tiered)	—	—	—	—	—	—	—	—	1	—	—	—	—
	(Flat)	—	—	1	—	1	—	—	—	—	—	—	—	—
1963	(Tiered)	—	—	—	—	—	—	—	—	—	—	—	—	—
	(Flat)	—	1	2	1	3	—	1	—	—	—	—	—	—
Date not known	Tiered	—	—	—	—	—	—	—	—	—	—	1	—	—
Total Number Tiered		—	2	4	6	8	5	3	1	5	2	1	2	—
Total Number Flat		—	11	22	9	7	—	6	—	—	—	—	1	—
Grand Total		—	13	26	15	15	5	9	1	5	2	1	3	—

Table 119T2: A Survey of Existing Buildings

List of Abbreviations Used			
A.	Area	L.	Lift
AC.	Acoustics	L.R.	Lift Room
AD.	Administration	LAV.	Lavatory
ADV.	Advanced	LDG.	Landing
AIR COND. PLANT	Air Conditioning Plant	LEC.	Lecture Room
ASST. REG.	Assistant Registrar	LEC. TH.	Lecture Theatre
		LES.	Lecturer's Room
		LG.	Lounge
		LIB.	Library
		LIBR.	Librarian
B.C.	Books		
B.C.	Brief Cases	M.	Meters
BAL.	Balance Room	M. PL.	Mechanical Plant
Bal.	Balcony	MACH.	Machine Room
BAT.	Battery Charging	MECH. ENG. D.O.	Mechanical Engineering Drawing Office
BIL.	Billiards Room	M. B.	Microscopy Bacteriology Laboratory
BOT.	Botany	MU.	Museum
BOT. HERB.	Botany Herbarium		
BROTH. COLL.	Brotherton Collection	OFF.	Office
BS.R	Bookstack Room		
C.	Cloaks	PHOTO.	Photometry
C. ENG. D.O.	Civil Engineering Drawing Office	POL.	Polisher
C.M.	Cloaks Men	PREP.	Preparation Room
C. & M. LAB.	Communications and Microwave Laboratory	PROF.	Professor
		PU.	Pump
C.R.	Common Room		
C. SPINNING RM.	Continental Spinning Room	R.M.	Recreation Men
C.V.	Brotherton Curator	R.R.	Rest Room
C.W.	Cloaks Women	R.W.	Recreation Women
CAL.	Calorifier	REC.	Recreation Room
CH.	Chess Room	RES.	Research
COM.	Committee Room	RES. LAB.	Research Laboratory
CON.	Control		
CON. TEMP. RES.	Constant Temperature Room (Research)	S.	Staff Room
CLR.	Cleaners	S.R.	Social Room
CRG.	Crushing	SAL.	Sampling Room
		SC.	Scouring Room
D.	Dark Room	SEC.	Secretary
D.R.	Dining Room	SEM.	Seminar Room
DES. STU.	Design Studio	SER.	Service Room
DR.	Dressing Room	SG.	Stage
DT.	Duct	SM. RES.	Small Research Laboratory
DYE. LAB.	Dyeing Laboratory	SOL. ST.	Solvent Store
		SP.	Spinning
E.M.	Electron Microscope Room	ST.	Store Room
E. LAB.	Electronics Laboratory	ST. REST.	Staff Rest Room
EL.	Elementary	STD.	Steward
ENT. VEST.	Entrance Vestibule	SW.	Switch Room
F.	Fadometer Room	T.	Tea Room
F	Fuel	T.C.R.	Technicians Common Room
FAN CHA.	Fan Chamber	T.R.	Tank Room
FIN. INT.	Finishing	TECH.	Technicians' Room
		TEL.	Telephone Switchroom
GEN. LAB. S-M.	General Laboratory Servo-Mechanics	TH.	Theatre
GH.	Greenhouse	TR.	Transformer
H.	Heating	U.S.R.	University Switch Room
H.E. LAB.	Heat Engines Laboratory		
H.V. LAB.	High Voltage Laboratory	V.	Void
HON.	Honours	V. PL.	Ventilating Plant
HU. RES.	Humidity Research Room		
		W.R.	Waiting Room
I.	Instruction or Teaching Laboratory	WASH.	Washroom
INS. WORK	Instrument Workshop	Ward.	Warden
INT.	Instruction or Teaching Laboratory	Work.	Workshop
KI	Kitchen	ZOO.	Zoology

Houldsworth School of Applied Science Building

Basement Plan 121a

Room	Description	sq. ft.
B11	Ceramics Research	536
B11A	Balance Room	42
B11B	Flame Photometry	70
B12	Small Scale Laboratory	2,052
B13	Infra Red Spectrometry	567
B14	Infra Red	270
B15	Ceramics Research	351
B16	Electrical Services	441
B17	Preparation Room	121
B18	Microscope Room	220
B19	Dark Rooms	180
		121
B20	X-ray Crystallography	529
ST.	Store	77
B21	Metallurgy Mechanical Testing Laboratory	441
B22	Ceramics Workshop	264
B23	Ceramics Laboratory	416
B24	Store	260
B25	Ceramics Preparation	520
B26	Ceramics Cutting and Grinding	676
B27	Male Lavatories	240
B28	Male Lavatories	224
B29	Ceramics Research	160
B30	Ceramics Research	160
B31	Ceramics Research	160
B32	Ceramics Research	240
B34	Lift Motor Room	320
B35	Water Pressurisation Plant	255
B32	High Tension Switchgear	416
B39	Gas Meter	180
	Transformer Room	440
B40	Ceramics Research	76
B41	Ceramics Research	352
B42	Ceramics Research	306
B43	Store	99
D	Dark Room	120
B36	Low Tension Switchgear	714

Ground Floor Plan 121b

Room	Description	sq. ft.
DLR	Demonstrations and Laboratory Record	113
BR	Balance Room	130
CAL	Calorimeter	91
11	GEF Solid Fuel Laboratory	1,129
12	Petroleum Product Laboratory	567
13	GEF Section Store	284
14	GEF Carbonisation Product Laboratory	567
15	Gaseous Fuels Laboratory	567
16	Fuel Chemical Analysis	351
17	Chemical Engineering Professor	330
18	Secretary	77
19	Enquiry Office	77
20	Office	286
21	Department Head	430
22	Research Laboratory	390
23	Ceramics Lecturers Room	286
24	Ceramics Physical Laboratory	832

25	Ceramics Chemical Laboratory	658
27	Professor's Lavatory	102
28	Female Lavatory	96
29	Students Lockers	520
30	Male Lavatories	240
32	General Stores	938
33	Cylinder Store	176
34	Lecturers Room	176
35	Male Lavatory	96
LB	Loading Bay	121
46	Chemical Engineering Laboratory	726
47	Stores Issue and Office	268
48	Chemical Engineering Equipment Store	450
49	Chemical Engineering Laboratory	3,487
50	Petrol and Spirit Store	390
ETB	Engine Test Bay	384
51	Workshop	2,160
52	GEF Crushing and Grinding	578
R	Refuse Bins	104
COM	Compressor	104
53	GEF Large Scale Laboratory	1,706
54	Metallurgical Furnace Room	989
55	Air Compressors	140
ST	Store	192
56	Ceramics Furnace Room	2,432
ENT	Entrance Hall	212
LAV	Lavatory (Male)	55

First Floor Plan 121c

Room	Description	sq. ft.
111	Balance Room	120
112	Met. Wet Chemical Analysis	840
113A	Dark Room	84
113	Met. Physical Methods	440
114	Met. Metal Physics	1,140
115	Met. Metallography	560
D	Dark Rooms	192
116	Grinding Rooms	240
117	Preparation	216
118	Met. Professor	330
119	Met. Waiting	100
119A	Secretary	120
120	Met. Research and General Purpose	484
121	Met. Research and General Purpose	308
122	Met. Research Laboratory	440
123	Staff	181
124	Staff	196
125	Staff	196
126	Staff	196
127	Staff	196
128	Staff	195
129	Staff	195
130	Male Staff Lavatory	168
131	Staff	196
132	Staff	196
133	Staff	196
134	Staff	196
135	Staff	196
136	Store	196
137	Store	112
138	Male Students Lavatories	224
139	Met. Research and General Purpose	352

140	Met. Research and General Purpose	416
141	Cleaner	64
142	Research and General Purpose	144
143A	Dark Room	96
145	Met. Research and General Purpose	140
144	Met. Workshop	320
143	Met. and General Purpose	160
146	Met. Research and General Purpose	160
147	Met. Research and General Purpose	320
148	Female Lavatory	72

Second Floor Plan 121d

Room	Description	sq. ft.
211	CE Research	351
212	CE Research	297
213	CE Research	297
214	CE Research	297
215	CE Research	297
216	CE Research	297
217	CE Research	297
218	CE Instruments	864
219	CE Research	183
220	CE Research	183
221	CE Research	351
222	Small Lecture Theatre	814
223	Departmental Library	484
224	Small Lecture Theatre	520
225	Preparation Room	324
226	Lecture Theatre	1,910
227	Ventilation	680
228	Ceramics Research	364
229	Cloaks	96
LAV	Male Lavatory	120
230	Male Lavatory	126
C	Cloaks	98
231	Tutorial Room	160
232	Staff Common Room	480
T	Tea Preparation Room	96
CL	Cleaner	64
235	Store	160
236	Store	88
237	Instruments	140
238	CE Lecturers Room	160
239	CE Lecturers Room	160
240	CE Lecturers Room	160
241	CE Lecturers Room	160
242	CE Lecturers Room	160
DR	Dark Room	160
LAV	Female Lavatory	80

Mezzanine

57	Records and Demonstration	72
58	Autoclaves	220
59	Physical Laboratory	465
60	Writing-up Room	200
61	Spare Room	110
OFF	Office	96
F SHOP	Fitting Shop	384
IW	Instrument Workshop	144
CR	Technical Staff Common Room	224
LR	Lockers	128

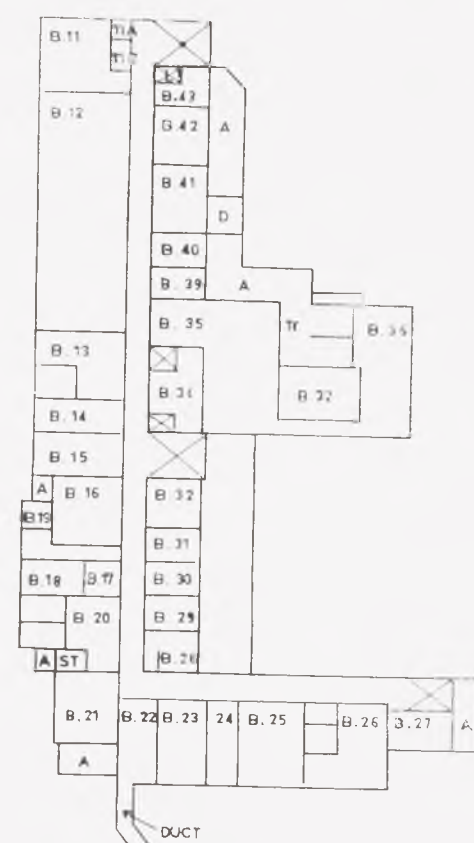
Third Floor Plan 121e

Room	Description	sq. ft.
311	JRC Dark Room and Research Laboratory	352
312	JRC Research Laboratory	270
313	JRC Research Laboratory	540
314	JRC Research Laboratory	540
315	JRC Research Laboratory	512
DR	JRC Dark Room	64
316	CEF Research	238
317	CEF Research	270
318	CEF Research	270
319	CEF Research	270
DR	Dark Room	64
320	CEF Research	206
321	CEF Research	352
322	CEF Research	220
323	CEF Research	220
324	CEF Research	220
325	CEF Research	286
326	CEF Stores	105
327	CEF Assistant Lecturer	300
328	Fuel Research Students Room	312
329	Store	35
330	Projector	238
RR	Rewinding Room	99
331	Cloaks	96
331A	Male Lavatory	120
332	Male Lavatory	192
333	CEF Lecturer	160
334	CEF Lecturer	160
335	CEF Lecturer	160
336	CEF Lecturer	240
337	Cleaner	64
338	JRC Stores	160
339	JRC Research Laboratory	250
340	JRC Research Laboratory	320
341	JRC Research	160
343	Director of Research	160
344	Secretary	160
345	Research Assistants	160
346	Female Lavatory	104
DR	CEF Dark Room	72

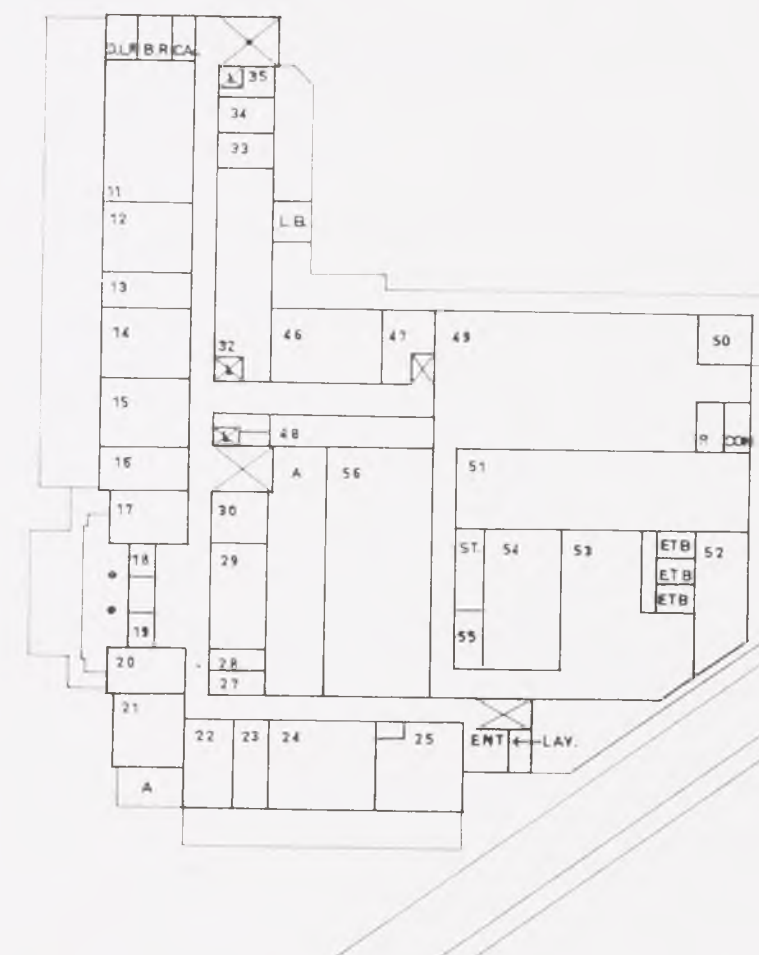
Fourth Floor and Roof Plan 121f

Room	Description	sq. ft.
401	Departmental Records Files	351
402	Tutorial Room	370
403	Plan Copying	250
404	General Drawing Office	2,052
405	Records	200
406	Plenum Plant	648
CC	Cleaner	64
408	Staff Room	160
409	Chemical Engineering Society	96
410	Staff Room	140
411	Tea Preparation	160
412	Student's Common Room	640
413	Male Lavatory	96
LR	Lift Room	42
TR	Tank Room	250
LR	Lift Room	42
PL	Poisons Laboratory	120

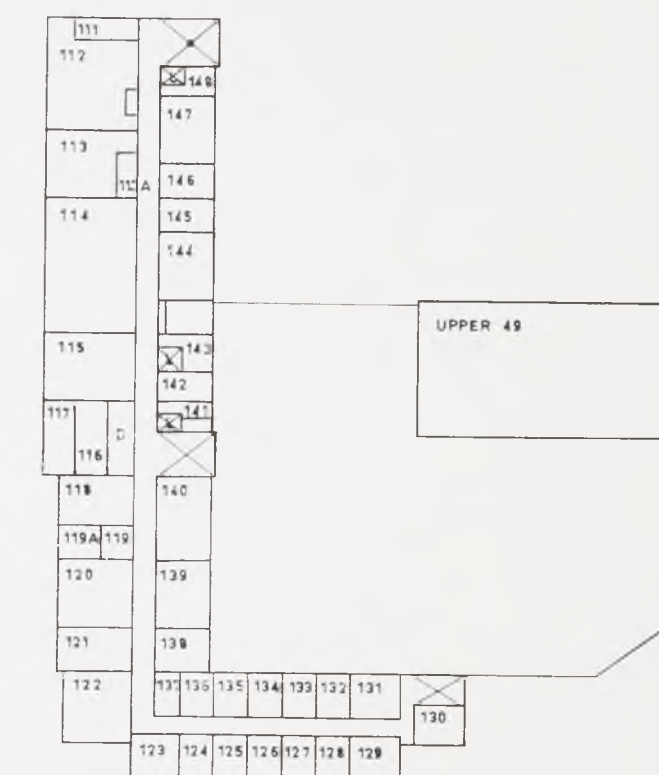
121a Basement



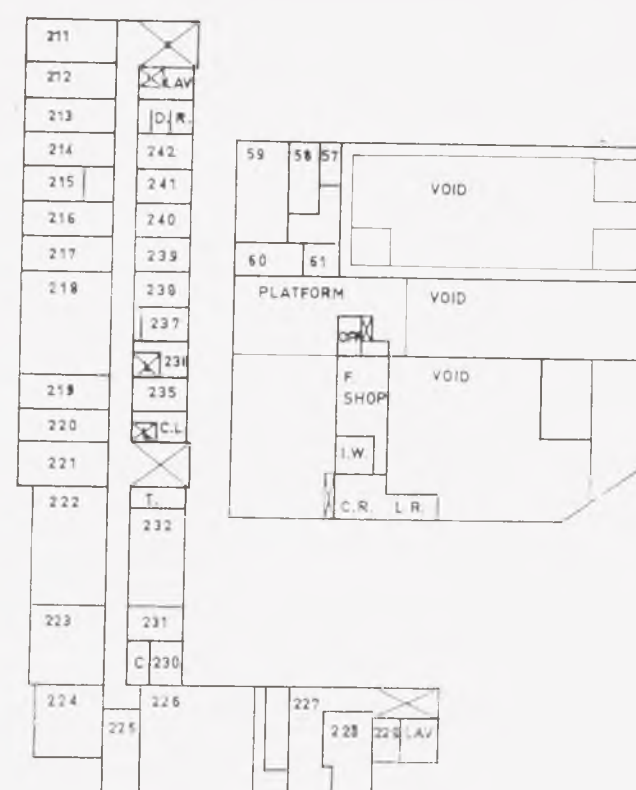
121b Ground Floor



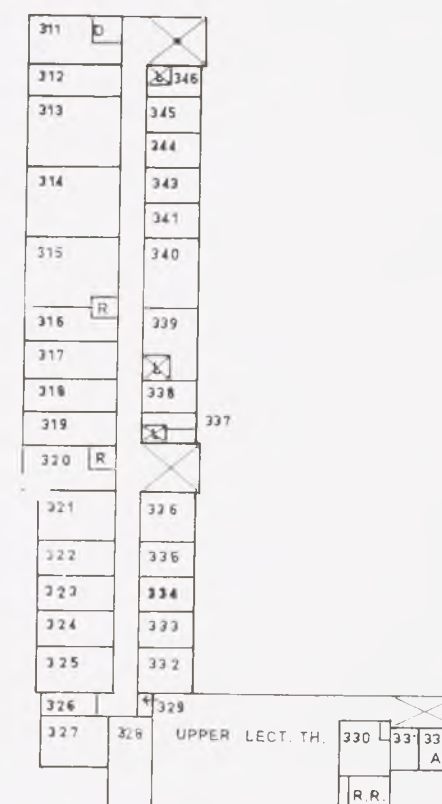
121c First Floor



121d Second Floor



121e Third Floor



121f Fourth Floor and Roof



Engineering Building

Basement Plan 123a

Civil Engineering

Room	Description	sq. ft.
1152	Store	462
1153	X-Ray Room	220
1154	Dark Room	60
1155	Control Room	170
1170	X-Ray Room	220
1171	Store	273
1141	Calorifier Room	756
1140	Switchgear Room	504
1139	Pump Room	504
1137	Long Term Testing Laboratory	504
1138	Tank Room for Hydrology Laboratory	2,409
1150	Store	192
1149	Store	288
1148	Store	288
1147	Store	144
1146	Store	276
1145	Store	432
1144	Compressor Room	228
1143	Gas Meter Room	150

Mechanical Engineering

B22	Calorifier Room	830
B14	Metrology Laboratory	1,750
B11	Calorifier Room	700
B06	Sound Proof Laboratory	Total 480
B07	Sound Proof Laboratory	
E09	Store	
B08	Store	
B03	Photo-Elasticity Laboratory	550
B02	Darkroom	110
B19	Eattery Room	132
B17	High Tension Switchgear Room	228
B13	Generator or Rectifier Room	450
B10	Store	175
B05	Gas Meter Room	90
No. 1	Mechanics Laboratory Tanks	176
B18	PAX and Maintenance Low Tension Switchgear Room	714
B16	Transformer Room	501
B04	Heat Engines Basement and Machines Bases	6,208
B15	Steam Duct	

Electrical Engineering

	Heavy Workshop	2,620
	Storage Space	
	Machines Laboratory II	1,416
	High Voltage Laboratory	1,440
	Machines Laboratory I	2,830
	Dark Room	72
	Control Room	220
	Dark Room	72
	Lecture Room for 62	720
	Acoustics Laboratory	800
	Standards Laboratory	490
	Acoustics Laboratory	92
	Laboratory Steward	121
	Power Systems Laboratory I	1,960
	Battery Room	114

Cloakroom	54
Generator and Switchroom	324
Laboratory Store	108

Ground Floor Plan 123b

Civil Engineering

Room	Description	sq. ft.
1004	Structures Laboratories including Aeroplane Structures	4,228
1019	Dynamic Strain Recording Equipment	89
1002	Porters Room	38
1018	Store	18
1018B	Balance Room	25
1017	Hydrology Laboratory	2,375
1005	Locker Room 244	1,617
1007	Instrument Room	143
1007B	Ventilation Plant Room	105
1009	Electronics Store	246
1010	Cleaner	39
1011	Dark Room	84
1016	Dark Room	84
1014	Scattered Light Apparatus Room	102
1013	Polariscope Room	102
1015	Polariscope Room	264
1012	Preparation Room	246
1020	Theory of Structures and Research Laboratory	7,693
1021	Laboratory	144
1022	Instruments Store	79
1023	Departmental Workshop	1,594
1024	Mixing and Casting Room	1,755
1025	Curing Room	960
1026	Welding Room	176
1027	Office	88
1028	Store	70
1029	Staff Lavatory	50

Mechanical Engineering

G69	Production Engineering Laboratory	3,724
G66	Dark Room	120
G67	Store	120
G68	Office	120
G65	Technical Staff Lavatory	216
G64	Students Lavatory	450
G52	Locker Room	1,000
G53	Office	110
G54	Theory of Machines Laboratory	3,797
G44	Entrance Hall Museum	2,300
G47	Cleaner	60
G49	Porter	60
G41	Store	160
G38	Office	90
G35	Metallurgy Laboratory	500
G36	Strength of Materials Laboratory	3,840
G63	Fitting Shop and Raw Material Store	1,116
G60	Maintenance and Machine Shop	2,900
G62	Technical Staff Lockers	140
G50	Heat Engines Laboratory	5,120
G56	Dark Room	60
G57	Dark Room	60
G51	Instrument Room	260

G39	IC Engines Room	960
G40	Store	99
G31	Fluid Mechanics Laboratory	3,340
G33	Office	88
G32	Store	32

Electrical Engineering

	Instrument Workshop	288
	Chief Mechanic	144
	Technicians Common Room	216
	Lavatory	72
	Staff and Research Room	140
	Staff and Research Room	140
	Students Study	288
	Research Room	315
	Research Room	315
		180
	Staff and Research Room	216
	Staff and Research Room	216
	Staff and Research Room	216
	Staff and Research Students Common Room	480
	Undergraduate Common Room	520
	Laboratory Store	90
	Museum	1,580
	Porter	192
	Coffee Servery	108
	Male Lavatory	440
	Cloakroom	35
	Locker Room	1,210

Mezzanine Plan 123c

Mechanical Engineering

Room	Description	sq. ft.
M87	Gallery	1,080
M88	Storage Area	1,920
M85	Gallery	770
M81	Gallery	1,410
M82	Gallery	444
M83	Storage Area	892

First Floor Plan 123d

Civil Engineering

Room	Description	sq. ft.
1046	Classroom for 63	926
1045	Tea Preparation Room	91
1042	Departmental Typists	247
1044	WC	13.5
1043	Female Rest Room	55
1039	Professor's Secretary WC	133
	WC	20
1040	Professor's Lavatory	36
1038	Professor's Room	234
1037	Seminar Room	234
1047	Lecture Theatre for 176	2,110

1051	Ventilation Plant Room	
1049	Ventilation Plant Room	
1050	Fan Room	175
1048	Technical Staff Common Room	210
1020	Upper Part of Laboratories for Theory of Structures, Concrete and Steel, Light Alloys	6,413
1055	Cement and Aggregate Store and Preparation Room	800

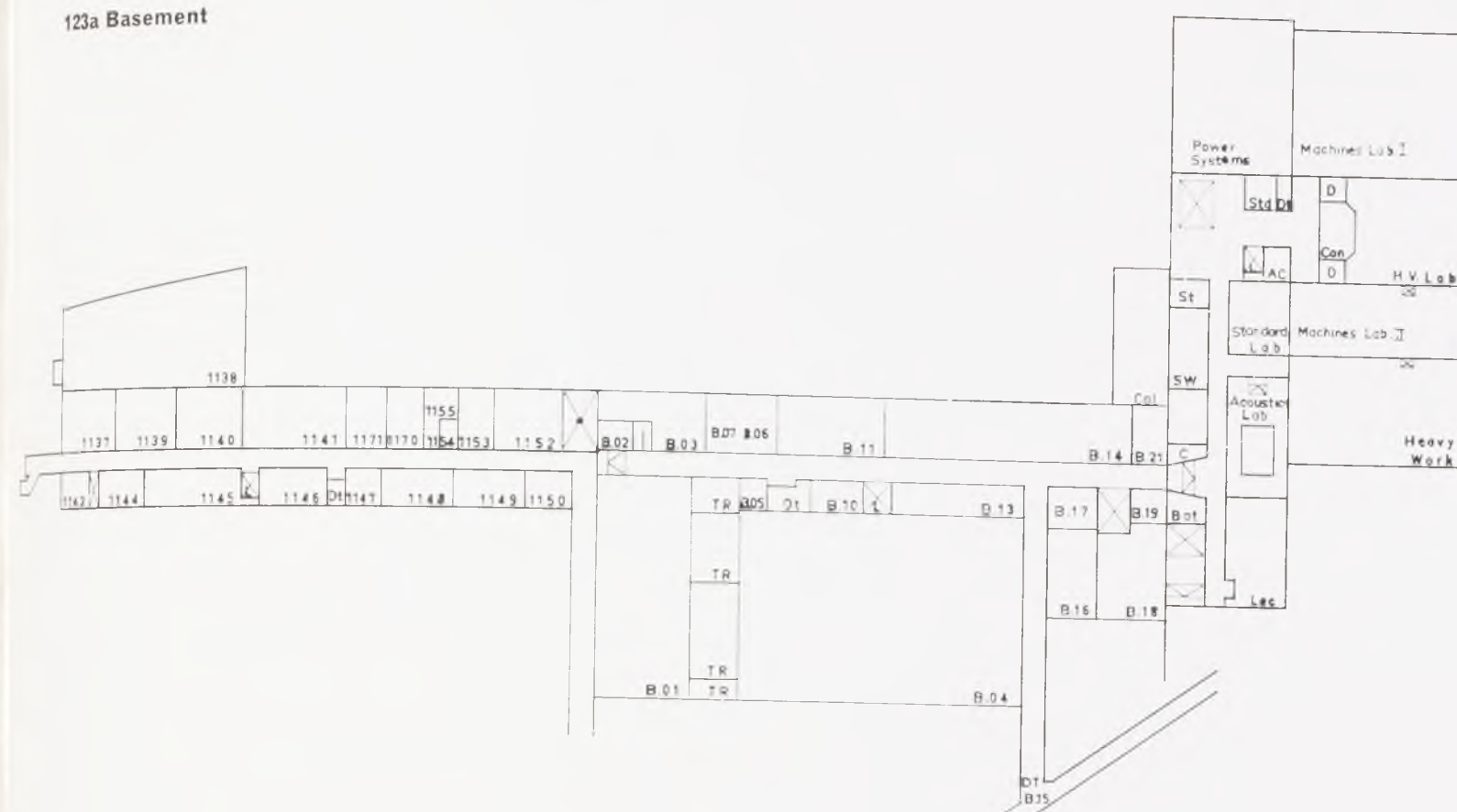
Mechanical Engineering

108	Projection Room	180
107	Lecture Theatre for 302 WC	2,304
	WC	19
LAV	Female Lavatory	53
123	Female Rest Room	108
118		240
116	Secretary's Room	240
114	Professor's Room	240
113	Seminar Room	240
112	Professor's Room	240
111	Secretary's Room	240
103	Preparation Room	228
102	Board Room	720
120	Professor's Lavatory WC	59
	WC	18
119	Store	55

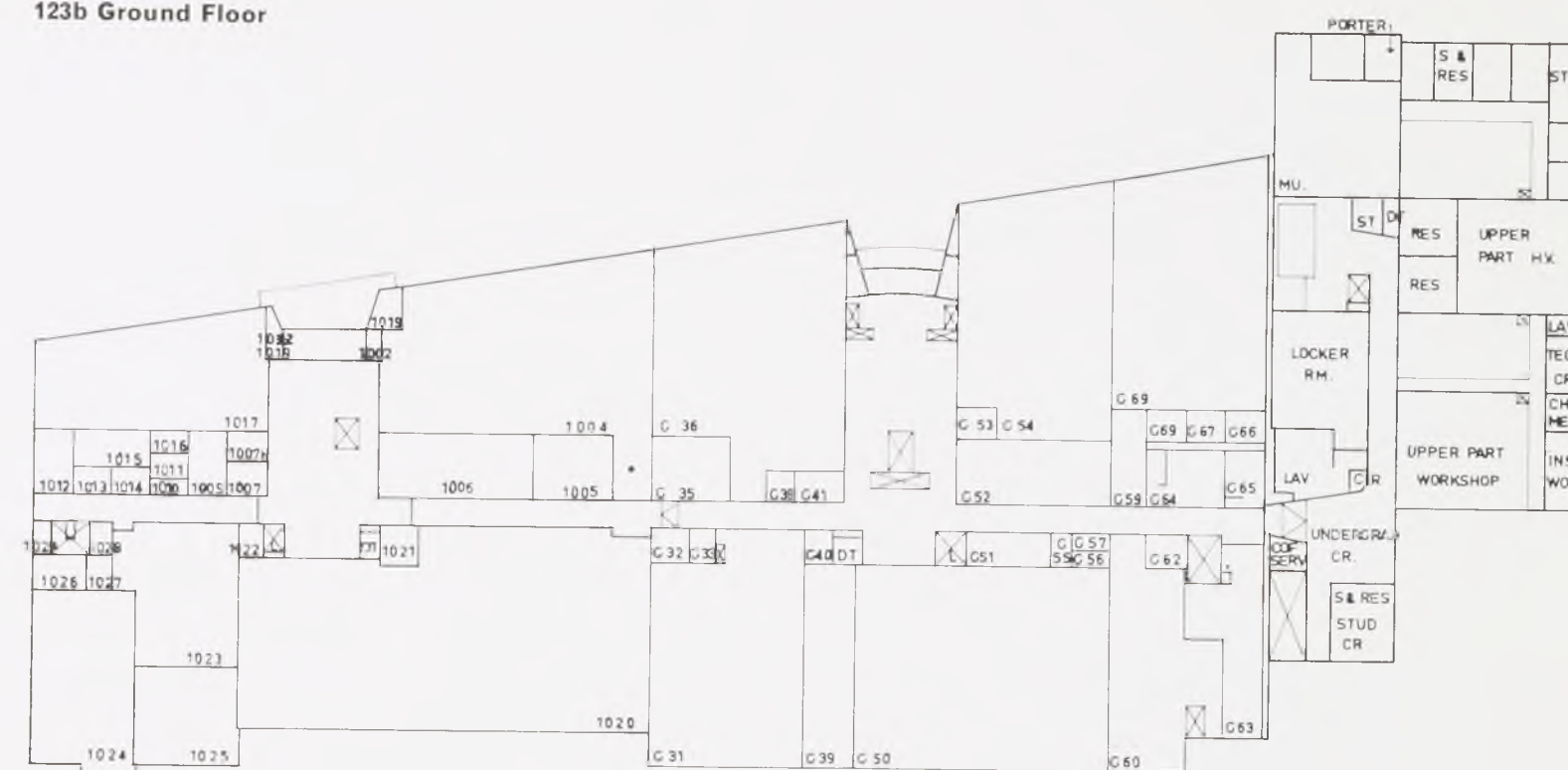
Electrical Engineering

	General Laboratory No. 1	2,718
	Lecture Room for 100	1,065
	Lecture Room for 62	721
	Cloaks	240
	Students Study	240
	Students Study	240
	Staff and Research Room	240
	Staff and Research Room	240
	Laboratory Store	64
	Laboratory Store	55
	Laboratory Store	144
	Laboratory Steward	130
	Professor's Lavatory	124
	Secretary's Room	124
	Professor's Room	204
	Seminar Room	204
	Professor's Room	204
	Cleaners Room	50
	Male Lavatory	187
	Lecturers Room	132
	Lecturers Room	132
	Lecturers Room	132
	Small Research Room	166
	Small Research Room	166
	Secretary's Room	140
	Waiting Room	90
	Small Research Room	

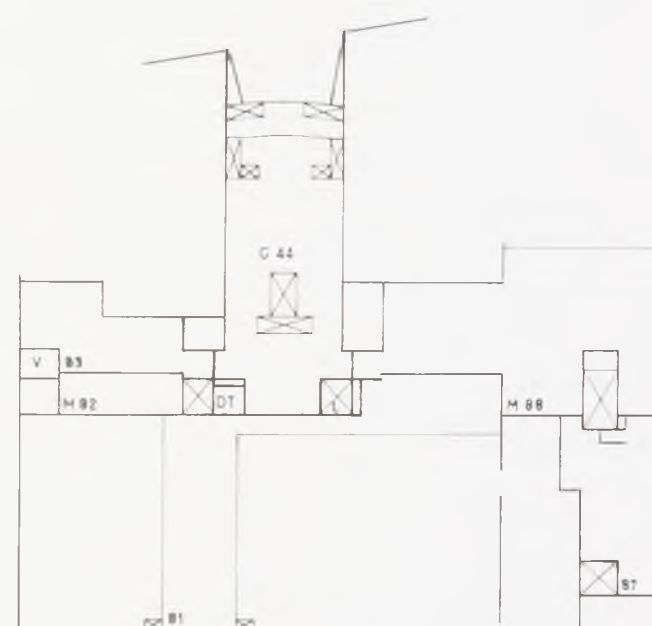
123a Basement



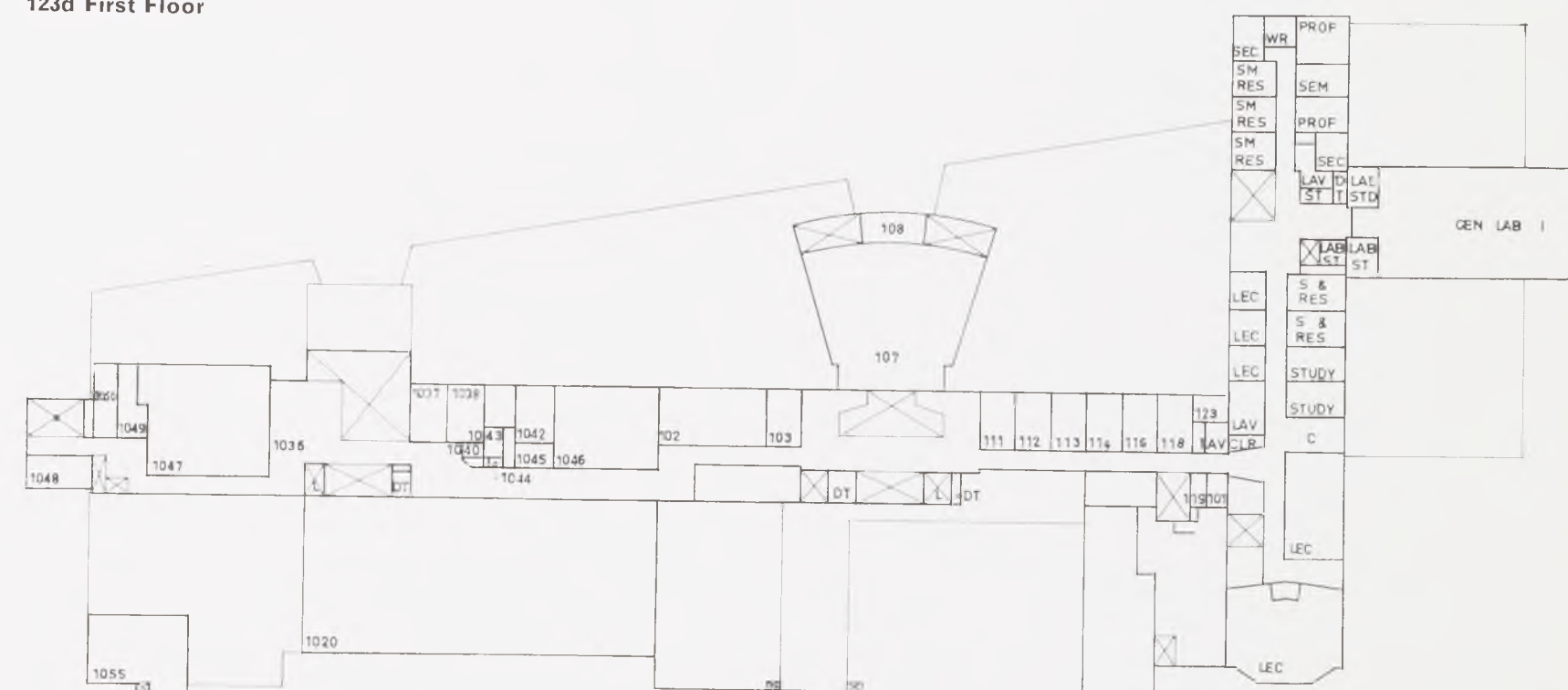
123b Ground Floor



123c Mezzanine



123d First Floor



Second Floor Plan 125a

Civil Engineering

Room	Description	sq. ft.
1069	Lecturer's Room	132
1068	Lecturer's Room	132
1067	Senior Research Work Room	132
1066	Senior Research Work Room	132
1064	Store Room	66
1065	Printing and Dark Room	198
1063	Male Lavatory	111
1062	Cleaners Room	21
1074	Male Lavatory	130
1078	Projection Room	87
1047	Upper Part of Lecture Theatre	2,016
1072	Staff and Research Students Common Room	220
1071	Model Structures Room	720
1070	Building and Science Materials Testing Laboratory	1,700

Mechanical Engineering

210	Projection Room	180
209	Lecture Theatre for 180	1,810
224	Technical Staff Room	384
231	Tea Preparation Room	96
219	Staff and Research Students Room	480
215	Students Common Room	480
206	Preparation Room	253
204	Lecture Theatre for 41	710
	WC	24
225	Male Lavatory	114
222	Staff and Research Students Rooms	144
220	Staff and Research Students Rooms	144
218	Staff and Research Students Rooms	144
213	Cleaner	55
	WC	14
	WC	14
205	Male Lavatory	202
203	Staff and Research Students Rooms	132
202	Staff and Research Students Rooms	132
201	Staff and Research Students Rooms	132

Electrical Engineering

	General Laboratory No. II	2,718
	Plant Room	1,042
	Staff and Research Room	240
	Lecture Room for 40	480
	Staff and Research Room	240
	Staff and Research Room	240
	Staff and Research Room	240
	Staff and Research Room	240
	Staff and Research Room	240
	Staff and Research Room	240
	Laboratory Store	96
	Laboratory Steward	131
	Small Research Room	131
	Laboratory Store	121
	Small Research Room	221
	General Laboratory HV and Servo-Mechanisms No. II	1,502
	Small Research Room	168
	Lecturers Room	138
	Lecturers Room	138
	Lecturers Room	138
	Male Lavatory	207
	Cleaner	52
	Dark Room	126

Third Floor Plan 125b

Civil Engineering

Room	Description	sq. ft.
1090	Soil Mechanics Laboratory and Highway Engineering	2,910
1089	Lecturers Room	132
1088	Lecturers Room	132
1087	Lecturers Room	132
1086	Lecturers Room	132
1085	Senior Research Room	132
1084	Senior Research Room	132
1083	Male Lavatory	93
	WC	18
1082	Cleaners Room	21
1091	Lecturers Room	125
1092	Lecture Theatre for 104	1,512
1093	Male Lavatory	140

Mechanical Engineering

307	Projection	132
325	Dark Room	56
323	Dark Room	132
319	Research Workshop	720
324	Store Room	75
317	Instrument Store	150
315	Thermostatic Heater Room	240
313	Lubrication Research Laboratory	460
303	Applied Mechanics Research Laboratory	1,200
321	Female Lavatory	114
	WC	15
	WC	15
318	Combustion Research Laboratory	282
316	Combustion Research Laboratory	282
314	Combustion Research Laboratory	138
312	Cleaner	63
304	Male Lavatory	98
301	Fluid Mechanics Research Laboratory	558
306	Ventilation Plant Room	54
309	Ventilation Plant Room	115
311	Ventilation Plant Room	54

Electrical Engineering

	General Laboratory III	2,718
	Lecture Room for 112	1,202
	Lecture Room for 40	480
	Technicians Common Room	240
	Service Room for Electronics and Research	720
	Service Room for Teaching Laboratories	480
	Laboratory Store	96
	Laboratory Steward	131
	Laboratory Store	131
	Laboratory Store	121
	Electronics Laboratory	1,924
	Dark Room	126
	Cleaner	52
	Male Lavatory	207
	Lecturers Room	138
	Lecturers Room	138
	Lecturers Room	138

Fourth Floor Plan 125c

Civil Engineering

Room	Description	sq. ft.
1117	Male Lavatory	210
1114	Third Year Drawing Office	2,752
1116	Supervisors Room	52
1115	Store Room	52
1113	Post graduate Drawing Office	720
1112	Students Study	240
1111	Students Study	240
1110	Students Study	240
1109	Public Health Engineering Laboratory	720
1108	Lecturers Room	132
1107	Lecturers Room	132
1106	Senior Research Room	132
1105	Senior Research Room	132
1104	Students Common Room	264
1103	Male Lavatory	111
1102	Cleaners Room	21

Mechanical Engineering

423		240
420	Library	2,190
411	Staff and Research Students Rooms	240
410	Staff and Research Students Rooms	240
408	Staff and Research Students Rooms	240
406	Students Quiet Rooms	240
404	Students Quiet Rooms	240
402	Students Quiet Rooms	240
421	Male Lavatory	116
	WC	22
418	Staff and Research Students Rooms	938
417	Staff and Research Students Rooms	138
416	Staff and Research Students Rooms	138
415	Staff and Research Students Rooms	138
414	Staff and Research Students Rooms	138
413	Cleaner	72
407	Male Lavatory	242
405	Staff and Research Students Rooms	138
403	Staff and Research Students Rooms	138
401	Staff and Research Students Rooms	138

Electrical Engineering

	General Laboratory HV and Servo-Mechanism No. 1	1,498
	Lecture Room for 40	480
	Small Research Room	240
	Small Research Room	240
	Small Research Room	240
	Small Research Room	240
	Small Research Room	240
	Small Research Room	240
	Laboratory Store	96
	Laboratory Steward	131
	Communications and Microwave Laboratory	2,143
	Dark Room	126
	Cleaner	52
	Male Lavatory	207
	Lecturers Room	138
	Lecturers Room	138
	Lecturers Room	138

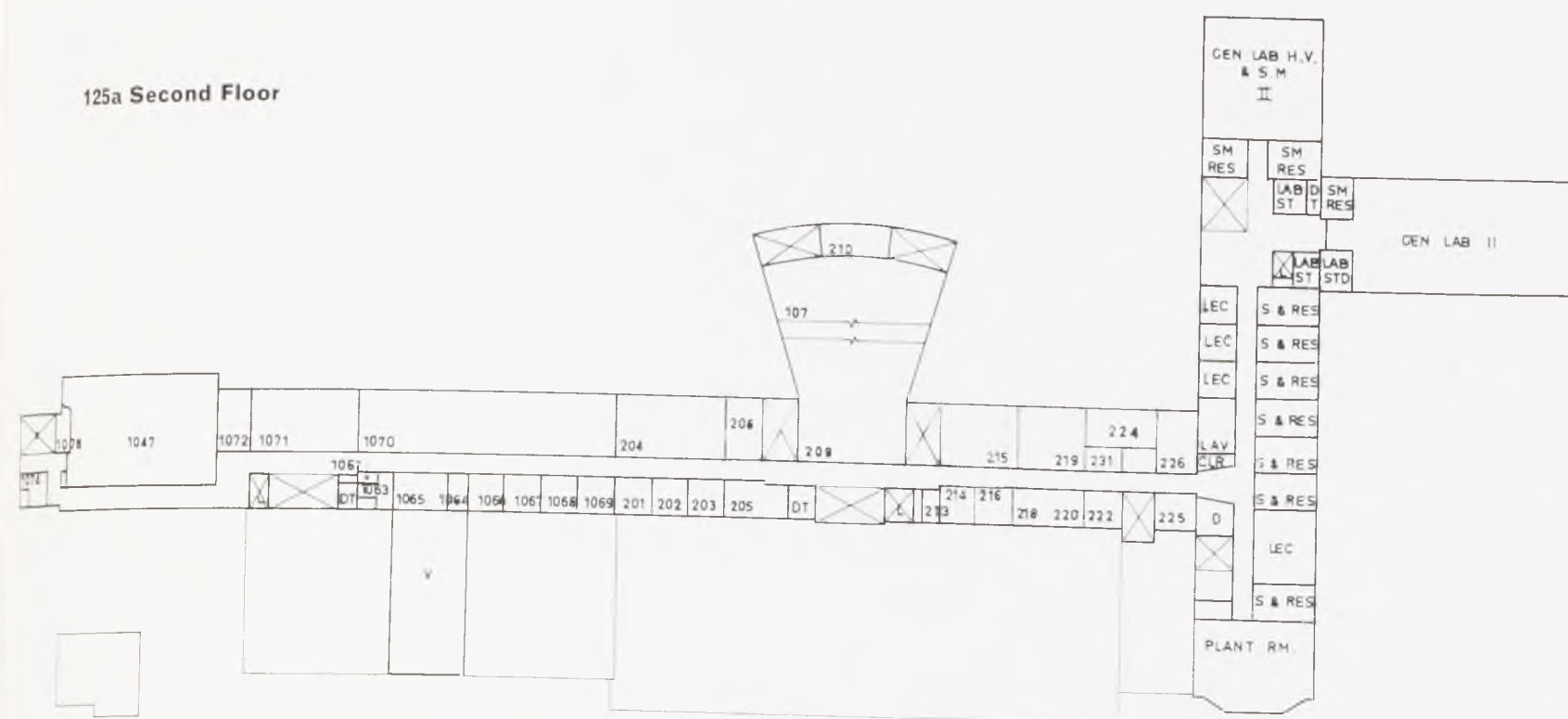
Fifth Floor Plan 125d

Room	Description	sq. ft.
1125	Part First and Second Year Drawing Office (Mechanical Engineering)	2,774
	WC	18
1126	Male Lavatory	67
	Cleaner	10
1124	DO Shop and Store	240
1122	Lecturer's Room	240
1127	First and Second Year Drawing Office	3,218
1128	Male Lavatory	210
510	Lecture Room for 90	1,230
508	Third Year Drawing Office	2,929
506	DO Shop and Store	96
507	Supervisor	84
503	Supervisor	84
504	Office and Store	144
502	Male Lavatory	104
501	First and Second Year Drawing Office	2,140
	Tank Room	240
	Lift Motor Room	115

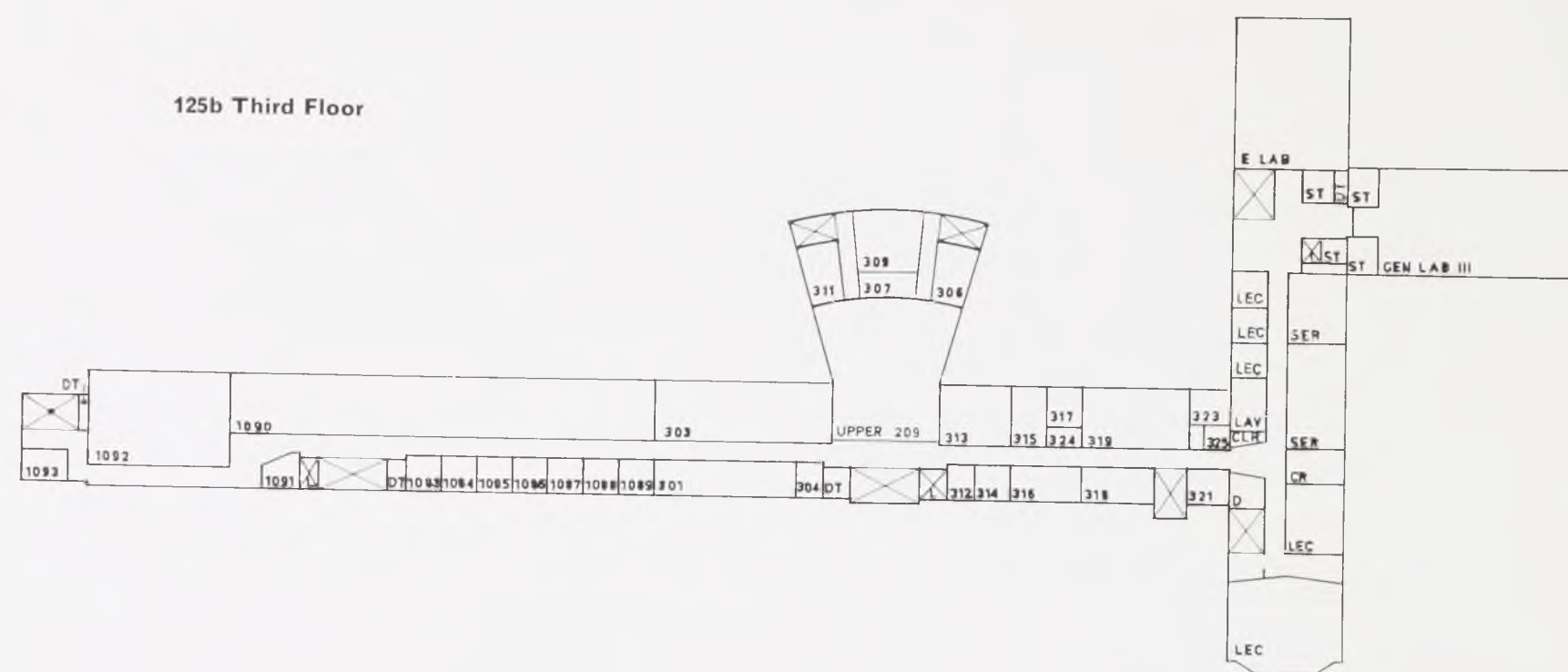
Roof Plan 125e

Room	Description	sq. ft.
1131	Tank Room	434
1133	Lift Motor Room	170
RO4	Plant Room	144
	Roof Plan over Lecture Room	1,435
	Roof Plan over Tank Room	600

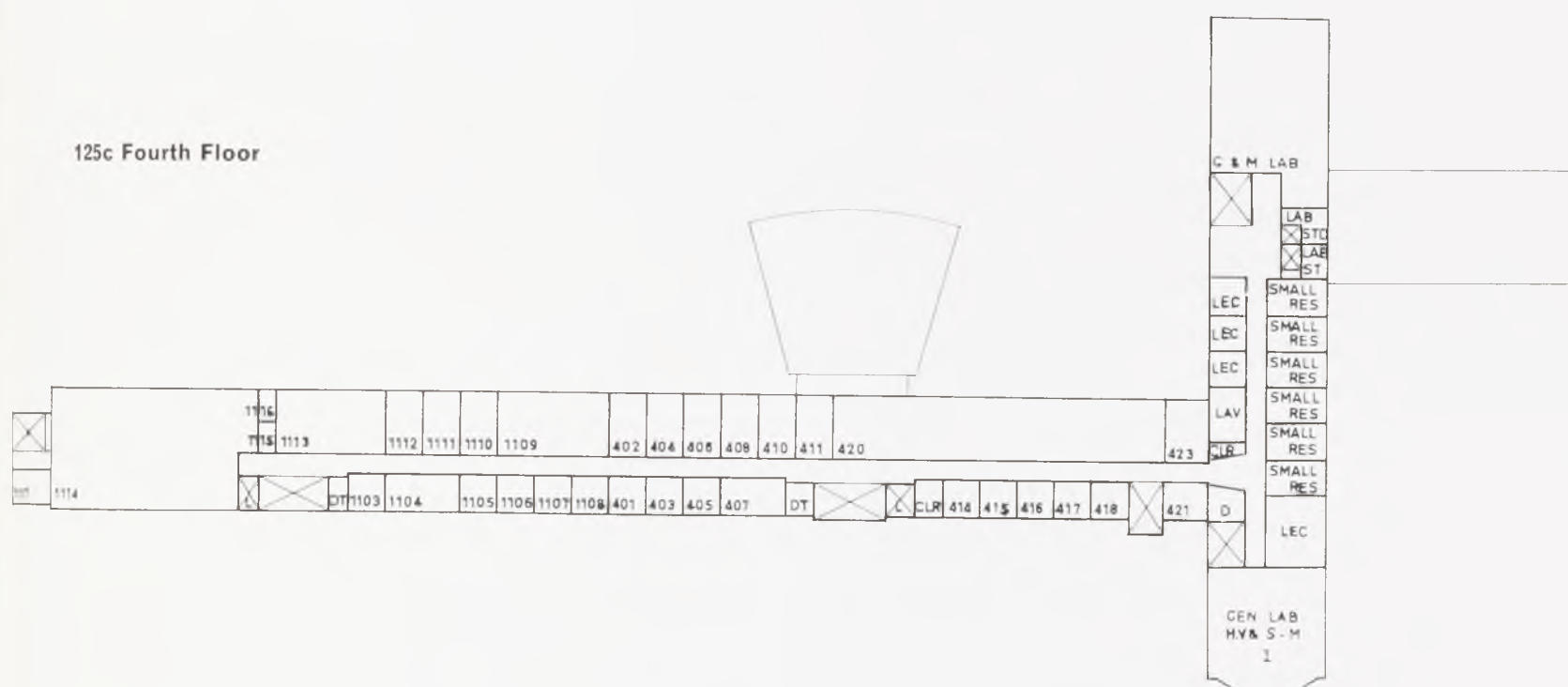
125a Second Floor



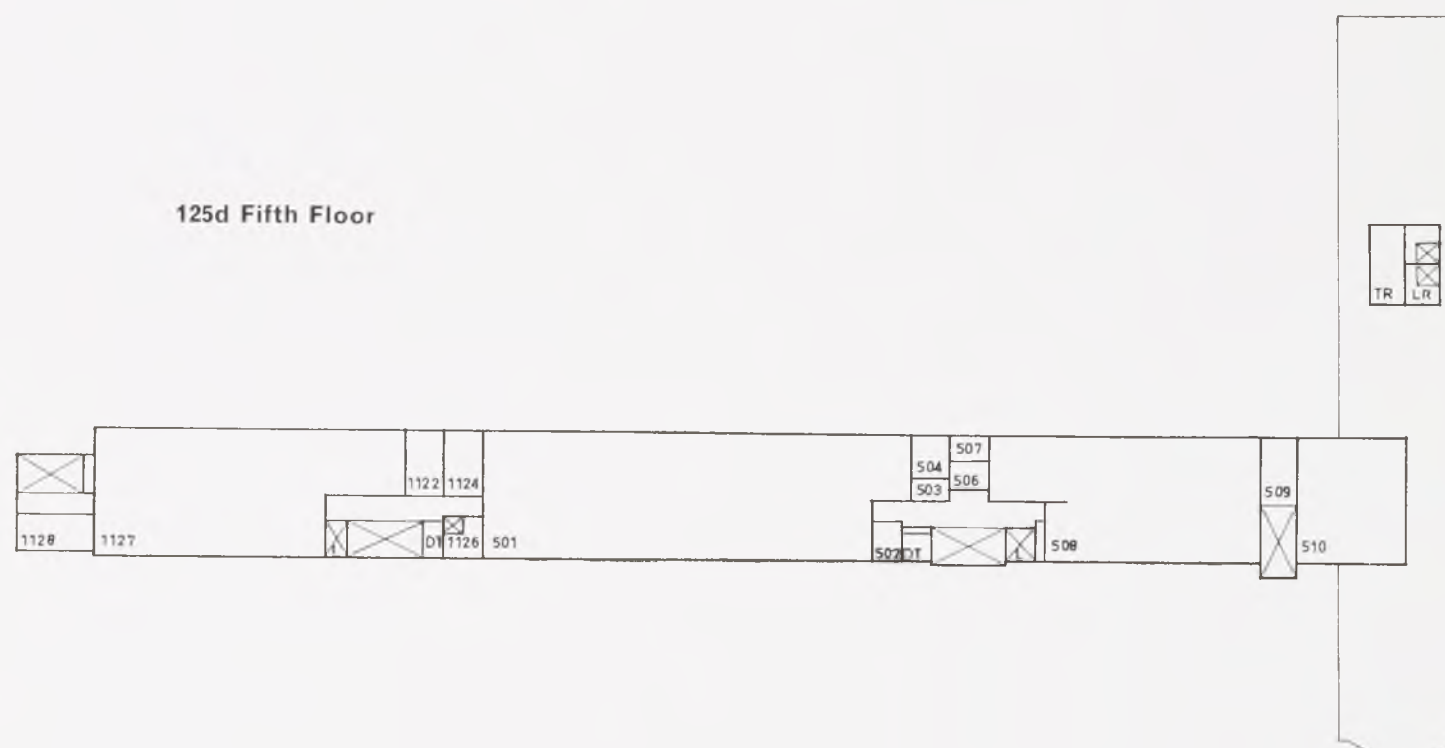
125b Third Floor



125c Fourth Floor

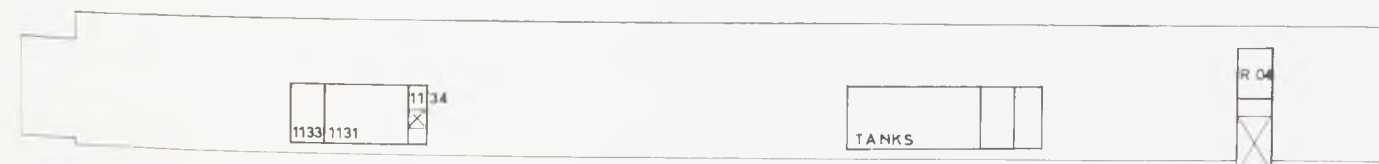


125d Fifth Floor



125e Roof

ROOF
OVER
TR & LR



Mining Building

Basement Plan 126a

Description	sq. ft.
Boilers	550
Photometry	324

Ground Floor and Mezzanine Plan 126b

Description	sq. ft.
Crushing Laboratory	1,492
Hall	428
Sampling	154
Stores	32
Machinery Room	770
Laboratory	114
Laboratory	114
Laboratory	2,886
Hall	596
Lavatories	80
Lavatories	80
Lavatories	160
Private Room	352
Private Room	264

Mezzanine

Cleaners	100
Cleaners	46

First Floor and Mezzanine Plan 126c

Description	sq. ft.
Annexe	254
Lavatory	160
Research Laboratory	378
Research Laboratory	540
Laboratory	340
Research Laboratory	418
Laboratory	551
Research Laboratory	399
Office	340
Private Room	352

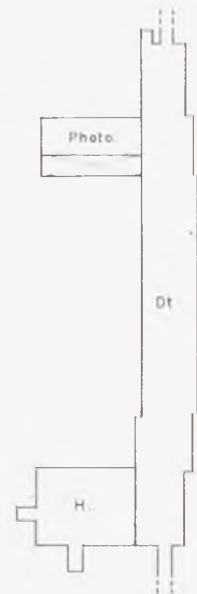
Mezzanine

Cleaners	90
Cleaners	70

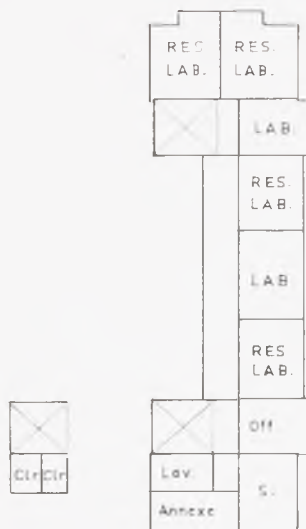
Second Floor Plan 126d

Description	sq. ft.
Lecture Room	904
Private Room	320
Lecture Room	627
Drawing Office	1,620
Lavatory	82
Private Room	546
Dark Room	100
Private Room	176
Lobby	60

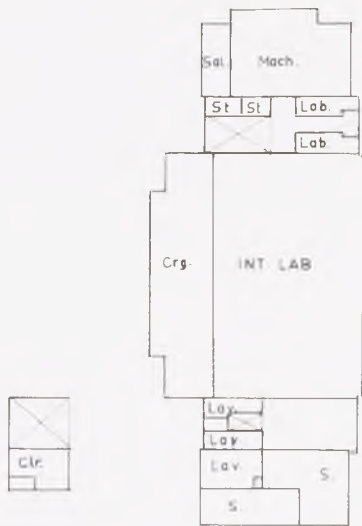
126a Basement



126c First Floor and Mezzanine



126b Ground Floor and Mezzanine



126d Second Floor



Physics and Chemistry Building

Basement Plan 128a

Chemistry		
Room	Description	sq. ft.
B.1	Research Laboratory	254
B.2	Research Laboratory	346
B.3	Research Laboratory	422
B.4	Research Laboratory	237
B.5	Research Laboratory	273
B.6	Research Laboratory	280
B.7	Research Laboratory	309
B.8	Research Laboratory	540
B.9	Comp. Room	195
B.10	Store	504
B.12	Research Laboratory	547
B.13	Research Laboratory	411
B.14	Research Laboratory	668
B.15	Research Laboratory	644
B.16	Research Laboratory	270
B.17	Research Laboratory	410
B.18	Research Laboratory	63
B.19	Research Laboratory	178
B.21	Research Laboratory	270
B.22	Research Laboratory	428
B.23	Research Laboratory	264
B.24	Research Laboratory	264
B.25	Research Laboratory	228
B.26	Research Laboratory	327
B.27	Research Laboratory	293
B.30	Research Laboratory	
B.31	Staff Room	82
B.32	Preparation Room	253
104	Store	267
105	Store included with 107	630
106	Store	233
107	Store included with 105	
110	Cal. Room	
111	L. T. Switch Room	
112	H. T. Switch Room	
Pu.	Pump Room Adjacent 107	
Tr.	Transformer Rooms Adjacent 112	
102	Lecture Theatre	407
103	Lecture Theatre	696
104	Research Laboratory	260
105	Research Laboratory	121
121	Dispensary	71
122	Balance Room	220
123	Instruction Laboratory	5467
124	Balance Room	224
128	Teaching and Dark Room	263
129	Research Laboratory	340
129A	Preparation Room	90
130	Store	
131	Research Store	318
132	Research Store	350
138	Research Laboratory	117
139	Research Laboratory	106
	Lecture Theatre 'D' Adjacent	
	B.32	1546
B34	Research Laboratory close to B.24	214
B33	Research Service Room close to B.23	225

Physics

3	Research Laboratory	1118
4	Research Laboratory	323
5	Lavatories	98
6	Cleaners Room	77
7	Research Laboratory	418
8	Fixed Battery Room	624
9	Research Room	432
10	Lavatories	132
11	Research Room	168
13	Workshop	504
14	Workshop Store	240
15	Chief Technician's Office	230
19	Research Laboratory	640
20	Technical Staff Room	400
22	Meter Room	56
	Main Workshop Adjacent Room 20	1639
	Research Laboratory Adjacent Room 22	200
St.	Store Adjacent Room 19	160

Ground Floor Plan 129a

Chemistry

Room	Description	sq. ft.
G.1	Dispensary	89
G.2	Balance Room	103
G.3	Store	320
G.4	Store	
G.6	H. S. Room	103
G.8	Furnace Room	245
G.9	Dispensary	89
G.11	Balance Room	260
G.12	Teaching Laboratory	981
G.13	Research Laboratory	516
G.14	Research Laboratory	450
G.15	Administration Office	269
G.16	Administration Office	246
G.17	Staff Room	396
G.18	Research Laboratory	376
G.19	Research Laboratory	435
G.19A	Administration Office	171
G.20	Research Laboratory	340
G.21	Research Laboratory	399
G.22	Store	170
G.23	Lavatories	60
G.24		
G.26	Workshop	2428
G.28		
G.29	Research Laboratory	141
G.30	Workshop	899
G.31	Research Laboratory	144
200	Teaching Laboratory (South Wing)	2988
211	Store	1118
215	Research Laboratory	529
216	Research Laboratory	564
216A	Staff Room	120
216B	Staff Room	110
220	Administration Office	246
221	Research Laboratory	564
223	Research Laboratory	475
522	Unpacking Room	198

226	Teaching Lab. Annexe	79
228	Teaching Laboratory	1239
229	Teaching Laboratory	1371
230	Staff Room	111
231	Balance Room	208
233	Lavatories	234
238A	Balance Room	154
238B	Dispensary	150
238C	Staff Room	132
	Teaching Laboratory 'A' adjacent to G.6	3417
	Teaching Laboratory 'B' adjacent to G.2	3417
St.	Store adjacent to G.4	414
34	Balance Room adjacent to Lecture Theatre 'D' (upper half)	292
35	Staff Room also adjacent to above	197

Physics

	Introductory Laboratory 1	4431
	Research Staff opening off above	70
	Research Staff opening off above	70
	Stewards Room opening off (Laboratory 1)	100
	Staff Room opening off (Laboratory 1)	100
D	Dark Rooms. 15 opening off (Laboratory 1)	
Bat.	Battery Charging Room opening off (Laboratory 1)	60
	Lecture Room 1	1980
	Preparation Room adjacent to above rooms below	645
	Lecture Room 2	1088

First Floor Plan 129b

Chemistry

Room	Description	sq. ft.
101	Specimens Room (Teaching Lab.)	33
102	Balance Room	94
103	Store	120
104	Main Store	974
105	Administration Office	120
106	Staff Room	89
107	Specimens Room (Teaching Lab.)	33
109	Research Laboratory	101
110	Staff Room	109
111	Staff Room	48
112	Research Laboratory	691
113	Research Laboratory	895
114	Research Laboratory	699
115	Research Laboratory	678
116	Research Laboratory	206
117	Research Laboratory	598
118	Research Laboratory	435
118A	Administration Office	171
119	Staff Room	376
123	Research Laboratory	145
124	Administration Office	137
125	Lecturers Room	84
126	Staff	87
127	Research Laboratory	481

128	Staff	140
129	Research Laboratory	145
130	Store	770
300	Teaching Laboratory (South Wing)	2988
305	Research Laboratory	424
306	Research Laboratory	1398
310	Research Laboratory	190
311	Research Laboratory	850
312	Research Laboratory	263
314	Staff Room	105
315	Staff Room	143
330	Lavatories	206
334	Balance Room	189
335	Store Room	290
	Teaching Laboratory 'D'	3120
	Teaching Laboratory 'E'	3133
	Library close to Room 113	771
	Workshop close to Room 117	636
	Small Lecture adjacent to Room 117	412
S.	Technical Staff Common Room adjacent to Workshop	382
S.	Staff Common Room adjacent to Room 305	636

Physics

113	Store	200
114	Staff Room	150
116	Stewards Room	120
117	Laboratory Store	190
	Instruction Laboratory 3	5869
D.	4 Dark Rooms opening off above Lecture Room No. 3	945
st.	Store Room adjacent to Laboratory 3	168
Lav.	Lavatories adjacent to above	126
St.	Cleaners Store adjacent to above	42
D.	Dark Room adjacent to above	56
St.	Store Room adjacent to Laboratory 2	156
Bat.	Battery Charging Room	121
	General Instruction Laboratory (Lab. 3)	5201
St.	Laboratory Store adjacent to above	160
St.	Laboratory Store adjacent to above	160
S.	Staff Room adjacent to Room 114	150

Second Floor Plan 128b

Chemistry

Room	Description	sq. ft.
202	Balance Room	90
203	Store	315
204	Store	107
205	Workshop	334
206	Store	321
207	Store	91
208	Staff	140
210	Staff	130
211	Balance Room	82
212	Cleaners Room	53

Cont. Second Floor Plan Chemistry Department

Room	Description	sq. ft.
213	Laboratory (Teaching)	154
214	Staff	128
215	Research Laboratory	420
216	Research Laboratory	379
217	Research Laboratory	183
218	Research Laboratory	240
219	Staff Room	82
220	Research Laboratory	287
221	Research Laboratory	484
222	Staff Room	218
223	Research Laboratory	511
224	Research Laboratory	549
225	Staff Room	370
226	Administration Office	188
227	Research Laboratory	413
229	Preparation Room	861
231	Staff Room close to Room 215	123
232	Staff Room close to Room 216	123
233	Staff Room close to Room 216	123
400	Research Laboratory	425
400A	Staff Room	158
401	Research Laboratory	333
402	Research Laboratory	609
402A	Staff Room	115
407	Research Laboratory	450
408	Research Laboratory	420
409	Research Laboratory	435
411	Staff Room	96
412	Staff Room	81
436	Lavatories	217
440	Store	480
400	Instruction Laboratory	2820
	Lecture Room A	2155
	Lecture Room B	1371

Physics

1	Research Laboratory	759
2	Research Laboratory	342
3	Lavatory	128
4	Lavatory	
5	Battery Store	266
6	Cleaners Store	80
7	Staff Room	190
8	Research Room	507
9	Research Room	168
10	Research Room	288
11	Research Room	288
12	Research Room	144
13	Dark Room	180
14	Research Room	304
15	Research Room	180
16	Research Room	156
17	Store	90
18	Main Store	250
19	Office adjacent Room 29	242
20	Store	180
21	Research Room	245
25	Office	144
27	Professors Room	381
29	Professors Room	400
231	Main Store	255
232	Main Store	255
234	Stewards Room	120
235	Store	190
	Teaching Laboratory No. 4	3028

S.	Staff Room adjacent to Room 1	72
S.	Staff Room adjacent to above	72
S.	Staff Room adjacent to above	72
S.	Staff Room adjacent to above	90
S.	Staff Room adjacent to above	117
S.	Staff Room adjacent to above	170
St.	Store adjacent to Room 231	160
S.	Staff Room adjacent to Room 21	240

Third Floor Plan 129c**Chemistry**

Room	Description	sq. ft.
501	Laboratory	976
502	Research Laboratory	235
503	Staff Room	125
504	Staff Room	125
505	Staff Room	125
506	Staff Room	125
507	Research Laboratory	820
	Poison Lab. (Research) above 205	194

Physics

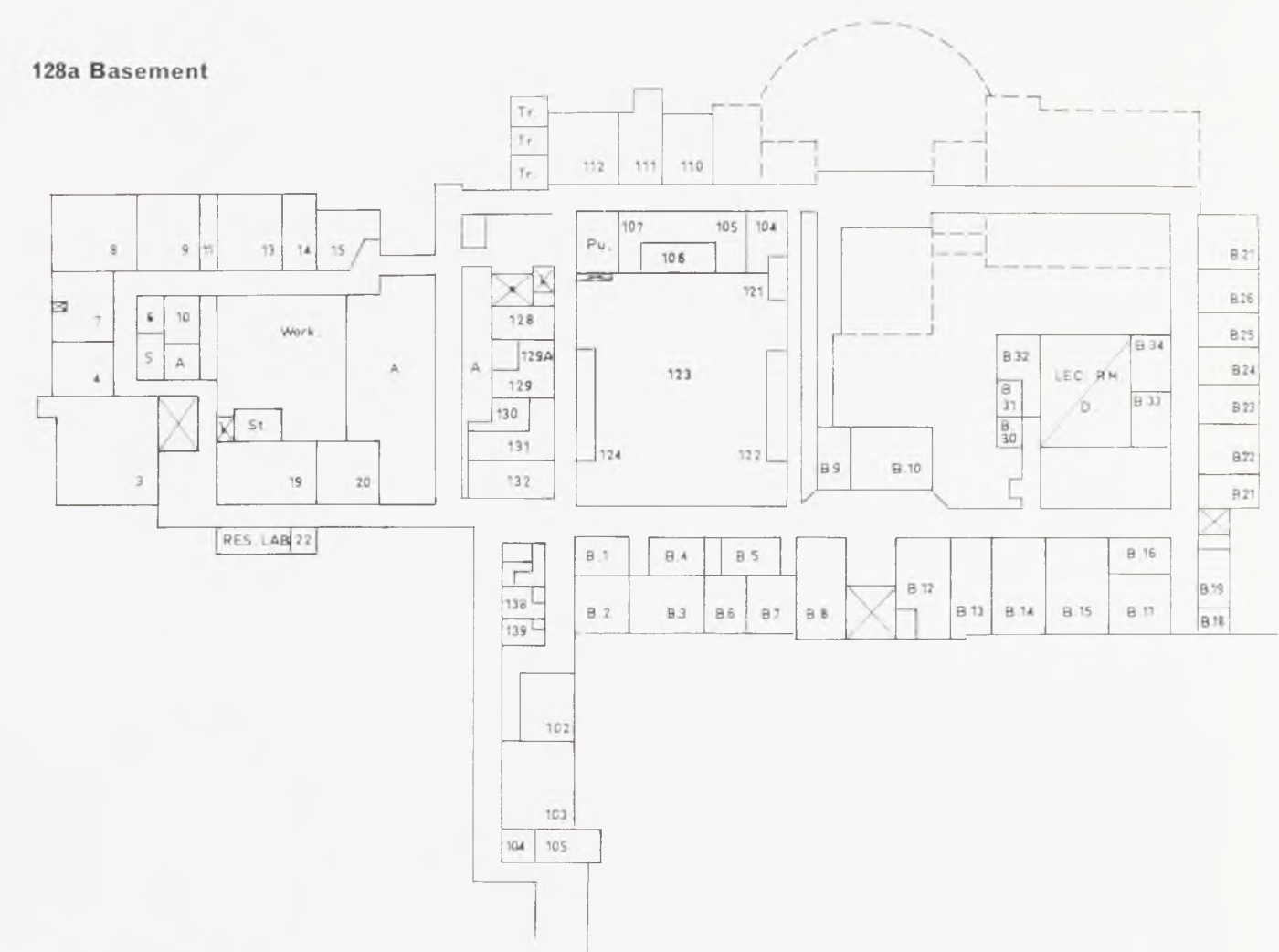
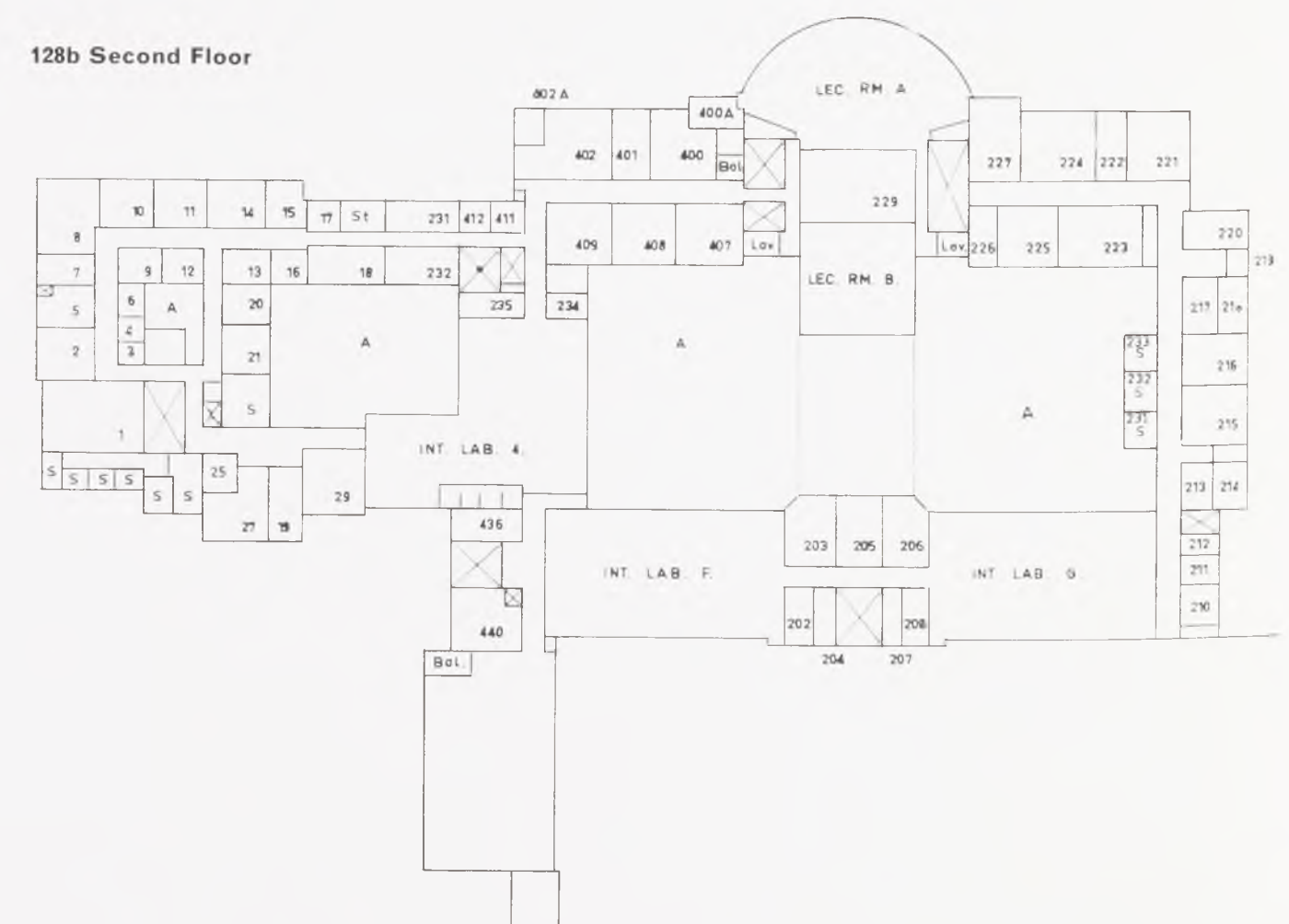
301	Service	236
302	Service	135
303	Private Room	135
304	Private Room	135
305	Private Room	135
306	Seminar	270
307	Servery	125
309	Private Room	180
310	Private Room	180
311	Private Room	180
312	Private Room	180
313	Library	750
314	Lavatories	205
315	Reading Room	542

Fourth Floor Plan 129d**Chemistry**

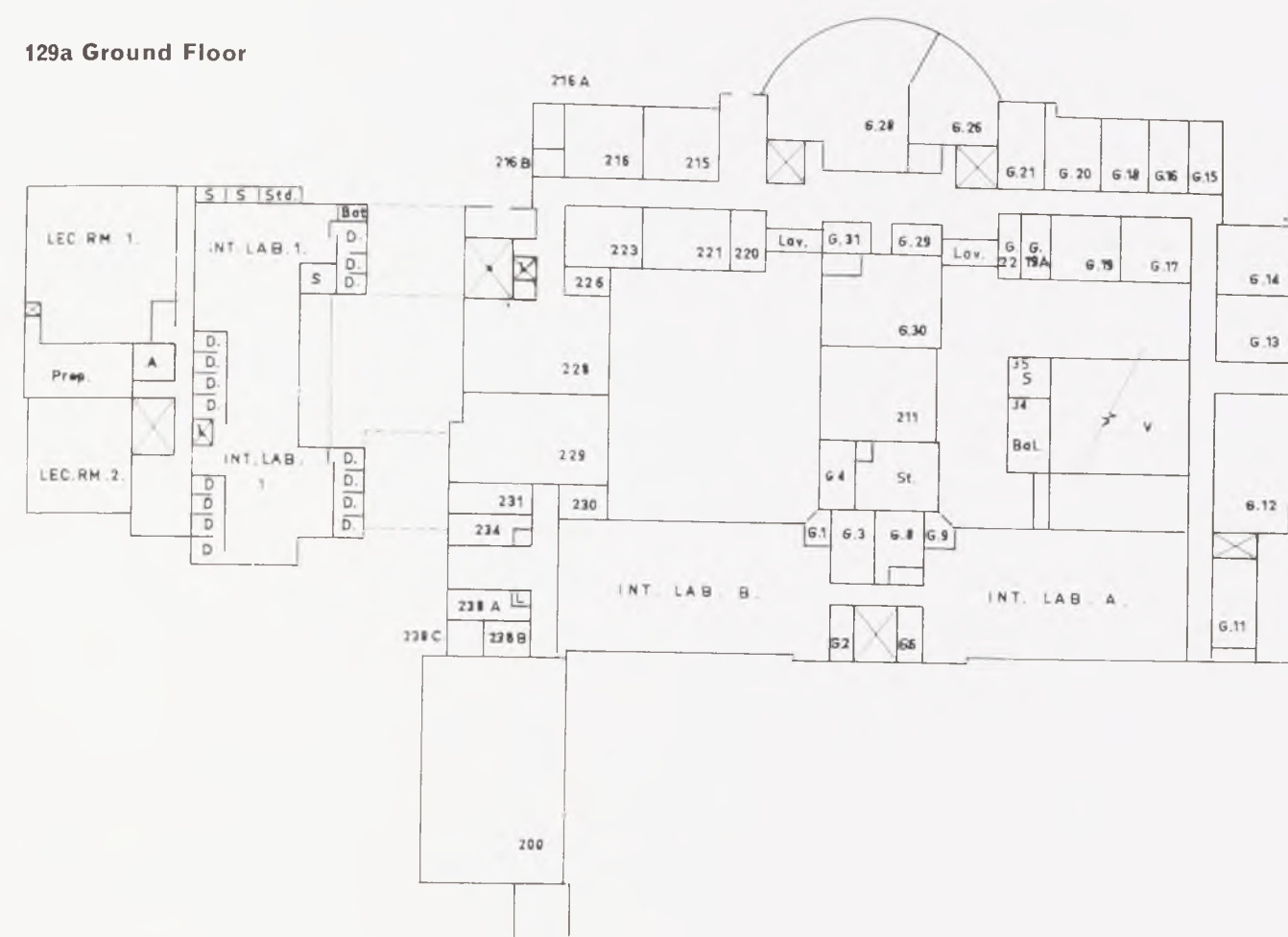
Room	Description	sq. ft.
601	Research Room	610
602	Research Room	400
603	Staff Rooms	125
604	Staff Rooms	125
605	Staff Rooms	125
606	Staff Rooms	125
607	Research Laboratory	814
607A	Balance Room	103

Physics

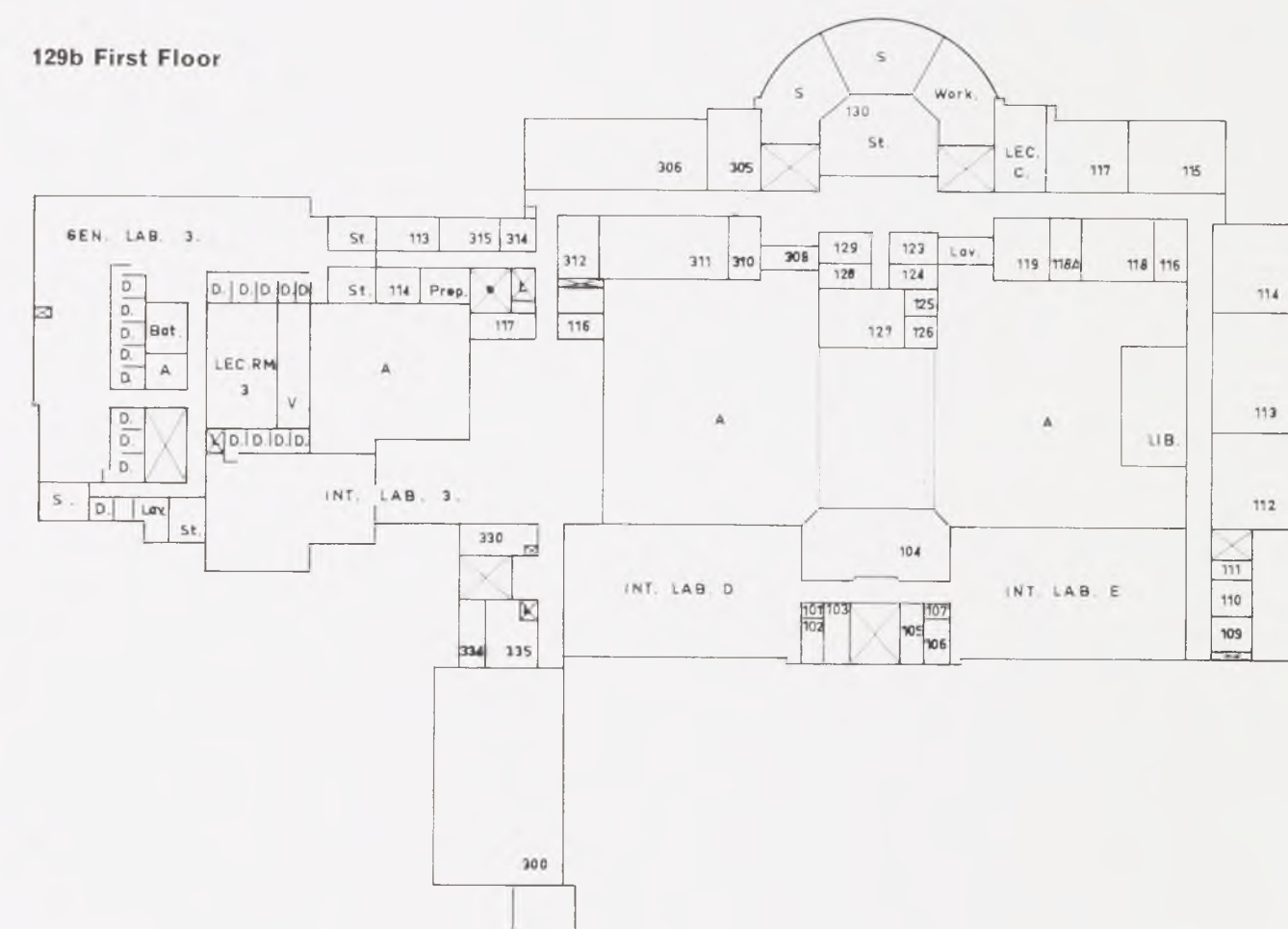
401	Workshop	300
403	Research Laboratory	2904
404	Lavatories	210
405	Research Room	542

128a Basement**128b Second Floor**

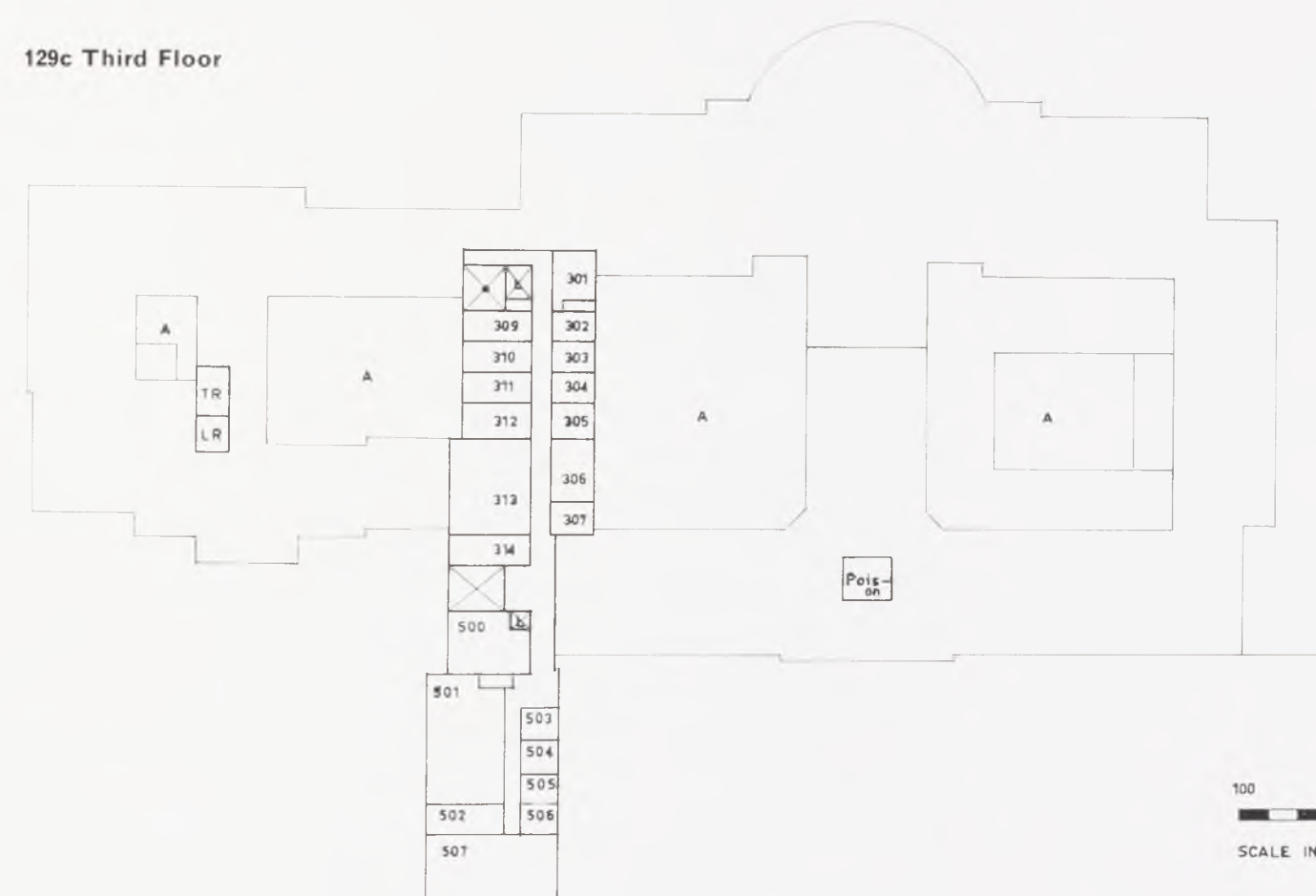
129a Ground Floor



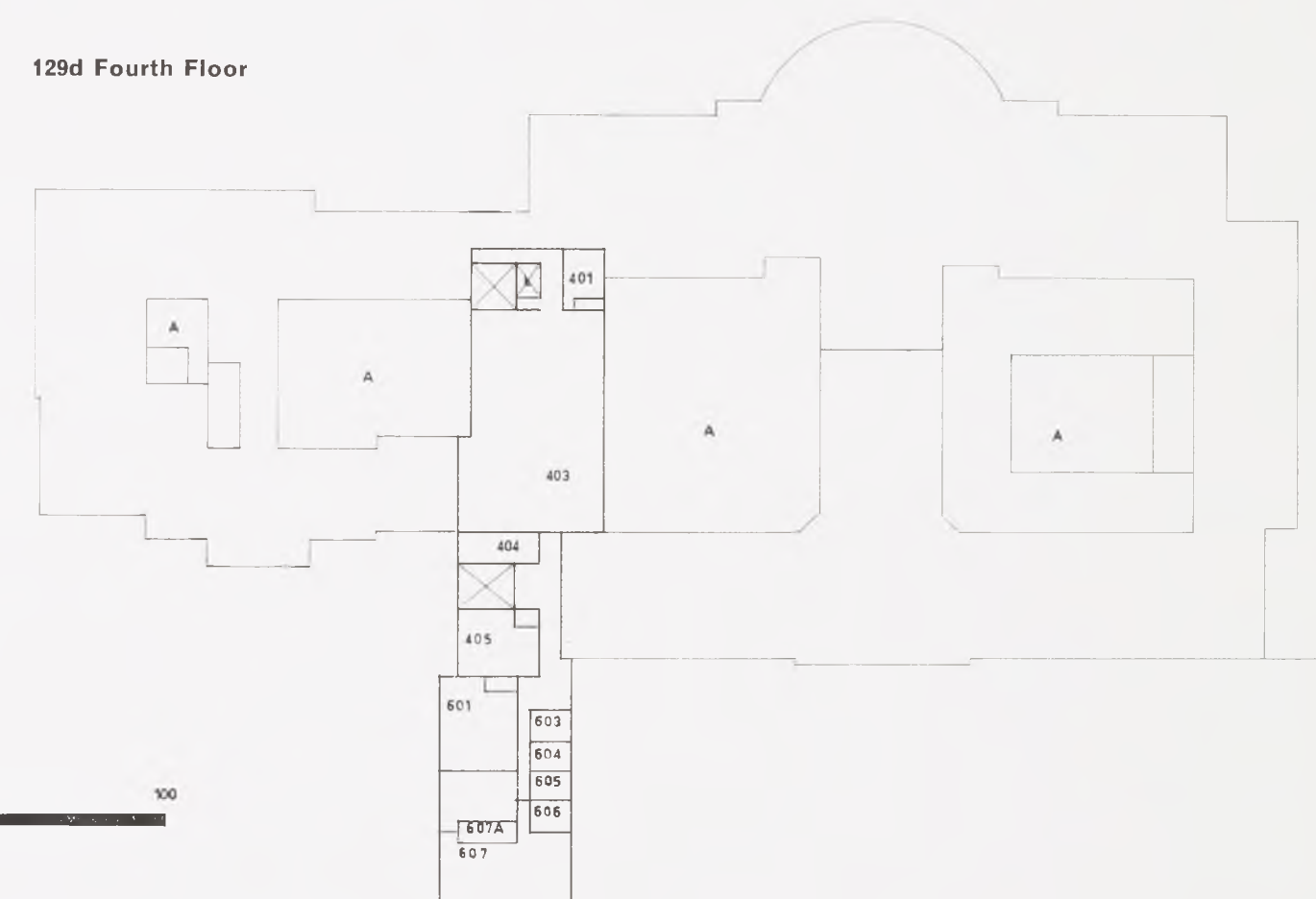
129b First Floor



129c Third Floor



129d Fourth Floor



100 50 0 100
SCALE IN FEET

Parkinson Building

Lower Ground Floor Plan 130a

Room	Description	sq. ft.
	Lavatories (Female)	1,260
	Lockers (Women Students)	1,740
	Lockers (Men Students)	5,100
	Lavatories (Male)	1,800
B8	Lecture Room	1,175
B9	Stationery Store	810
B10	Auditors	540
B11	Filing	540
	Calorifier	396
	Switch Room	1,023
	Air Conditioning Plant	1,386
	Archives	720
B21	Lecture Room	620
B23	Lecture Room	496
B25	Lecture Room	780
B26	Wages	425
B27	DRA	225
B28	Duplicating Room	350

Ground Floor Plan 131a

Room	Description	sq. ft.
	Female Lavatories (Staff)	230
	Male Lavatories (Staff)	200
	Tea Room	250
	Office	150
	Pro-Chancellor's Room	200
4	Resident Architect	280
5	Secretary	220
6	Office	475
7	Examinations Office	540
	Assistant Registrar	180
	Secretary	180
11	Office	690
	Brief Cases	350
	Secretary's Office	350
	Porter	200
26	Office	620
30	Office	496
32	Office	189
33	Office	189
34	Assistant Bursar	189
36	Bursar	455
37	Bursar's Secretary	136
38	Typists	285

First Floor Plan 131b

Room	Description	sq. ft.
	Lavatories	250
	Lavatories	220
	Office	190
	Office	190
104	Office	190
105	Office	340

106	Small Committee Room	450
108	Large Committee Room	1,350
109	Office	400
112	Council Chamber	1,900
115	Office	400
116	Office	400
	Secretary	180
118	Registrar	410
119	Vice Chancellor	415
120	Secretary	205
121	Office	260

Second Floor Plan 130b

Room	Description	sq. ft.
	Lavatories	230
	Lavatories	230
202	Lecture Room	770
204	Staff Room	260
205	Staff Room	205
206	Staff Room	424
207	Staff Room	171
208	Staff Room	293
209	Staff Room	162
210	Staff Room	171
211	Staff Room	171
212	Phonetics Record Store	265
213	Lecture Room	525
215	Lecture Room	525
216	Lecture Room	1,750
218	Staff Room	186
220	Staff Room	160
222	Staff Room	160
225	Library	740
226	Lecture Room	1,750
212	Phonetics Record Store	265

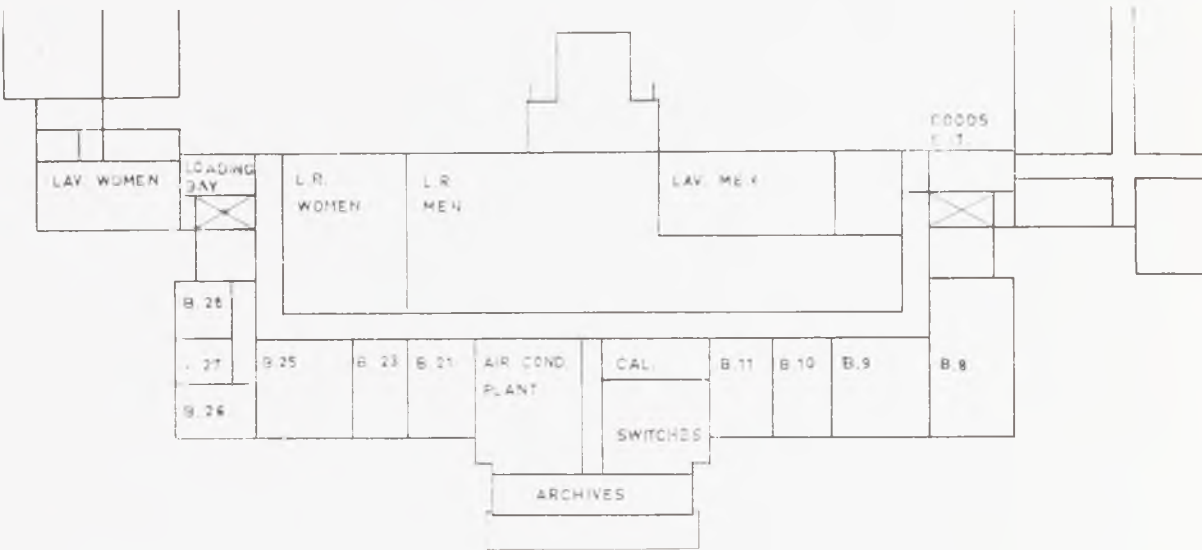
Third Floor Plan 131c

Room	Description	sq. ft.
301	Lecture Room	2,000
304	Lecture Room	660
305	Lecture Room	696
306	Lecture Room	560
308	Lecture Room	1,185
309	Store	225
310	Modern Language Library	925

Fourth Floor Plan 131d

Room	Description	sq. ft.
401	Staff Room (French)	170
403	Staff Room (French)	116
405	Staff Room (French)	130

130a Lower Ground Floor

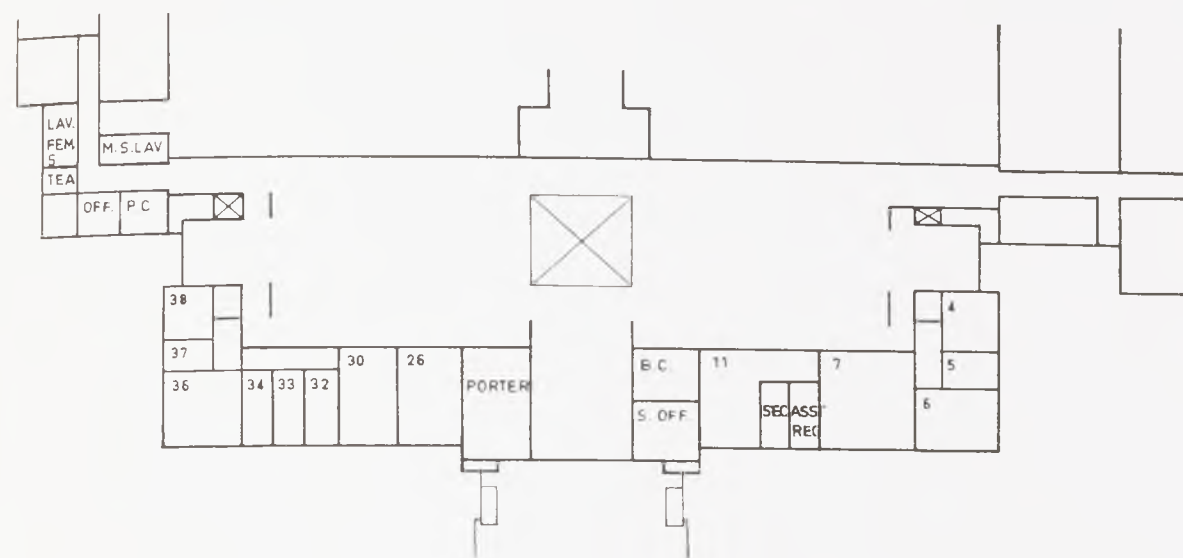


130b Second Floor

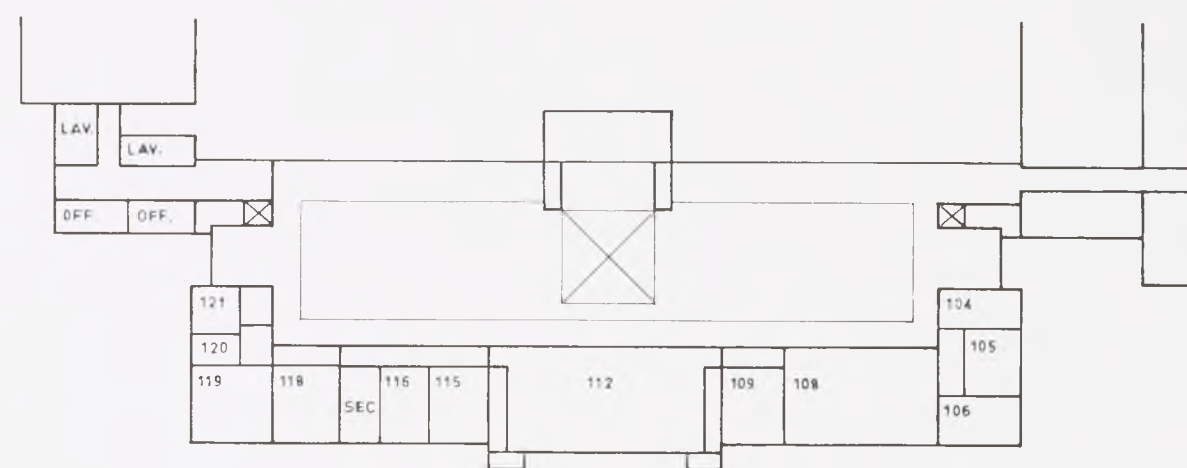


407	Staff Room (French)	130
409	Staff Rooms (French)	260
411	Staff Room (French)	270
413	Staff Room (French)	180
417	Joint Secretaries	270
421	Staff Room (French)	270
425	Staff Room (Spanish)	270
429	Staff Room (Spanish)	270
431	Staff Room (Spanish)	116
433	Staff Room (Spanish)	155
434	Staff Room (Spanish)	155
432	Staff Room (Spanish)	116
430	Staff Room (Spanish)	270
426	Staff Room (German)	270
422	Staff Room (German)	145
420	Staff Room (German)	145
418	Staff Room (German)	180
416	Staff Room (German)	145
414	Staff Room (French)	145
412	Staff Room (French)	290
408	Staff Room (French)	290
404	Staff Room (French)	290
402	Staff Room (French)	290

131a Ground Floor



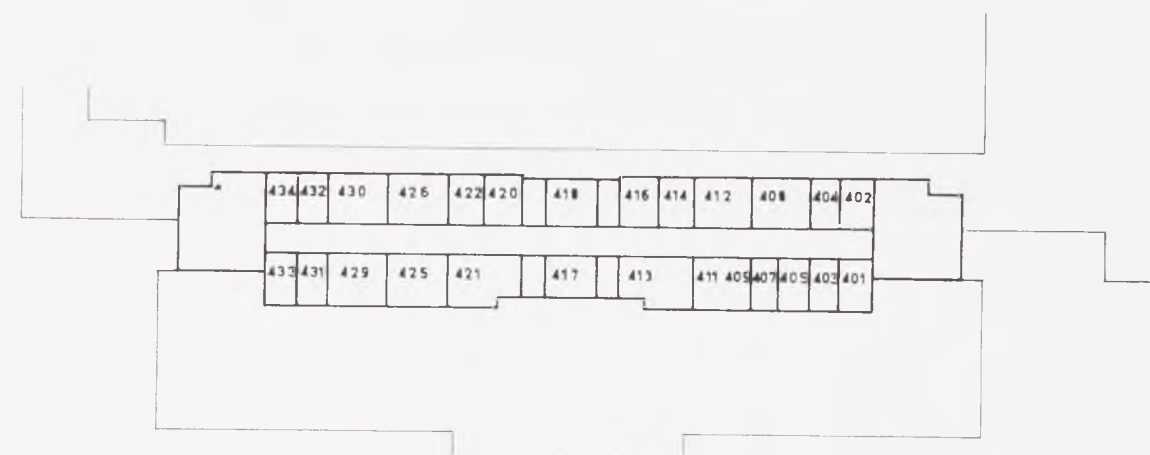
131b First Floor



131c Third Floor



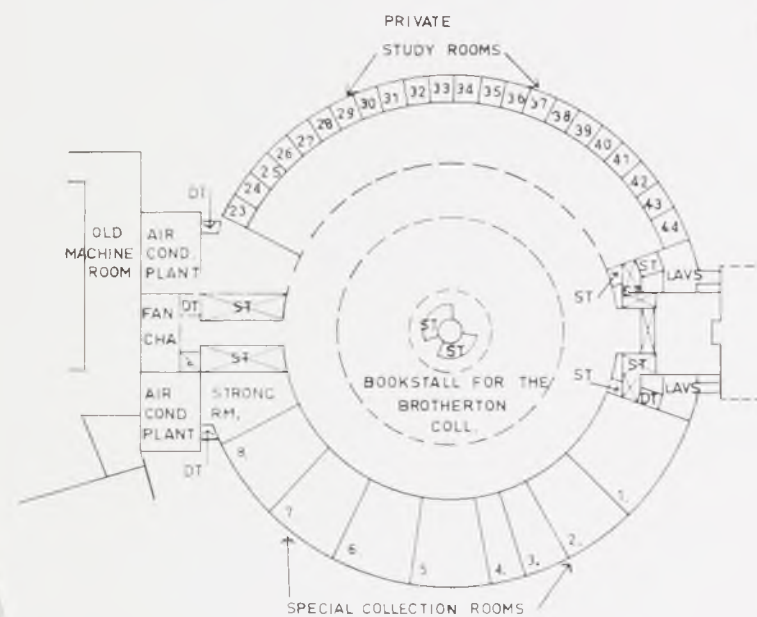
131d Fourth Floor



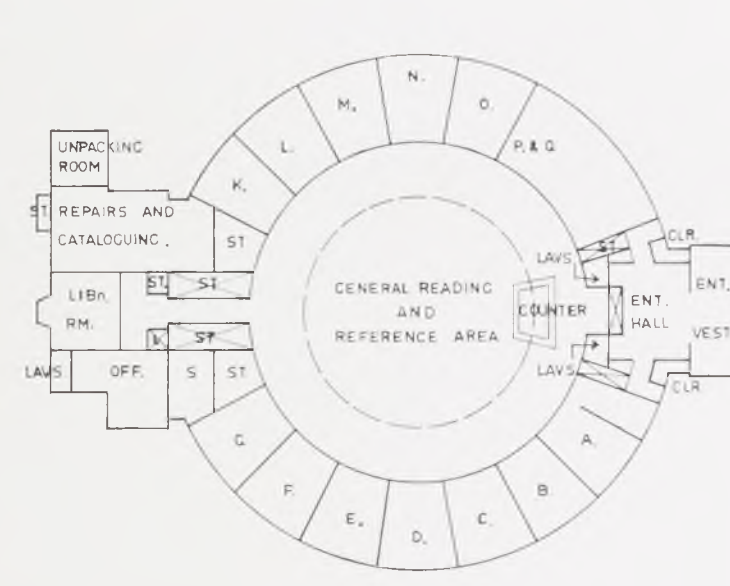
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SCALE IN FEET

Brotherton Library

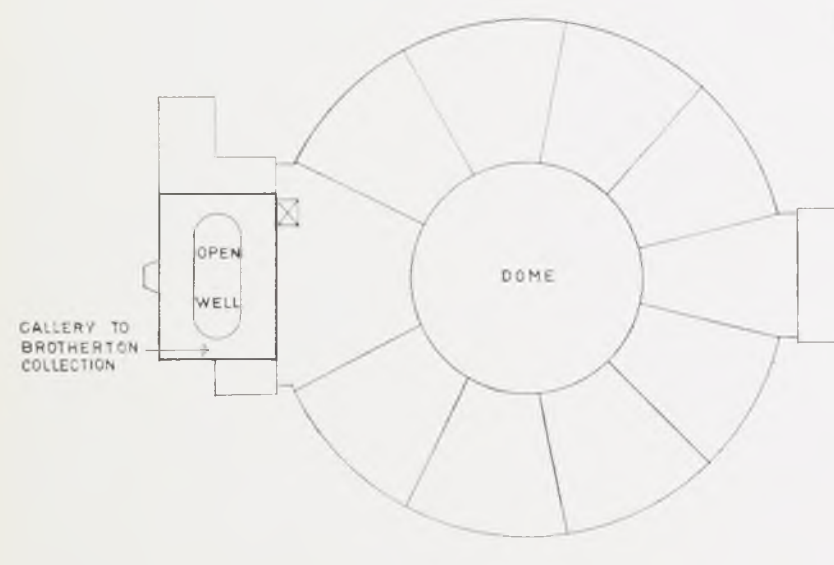
132a Basement



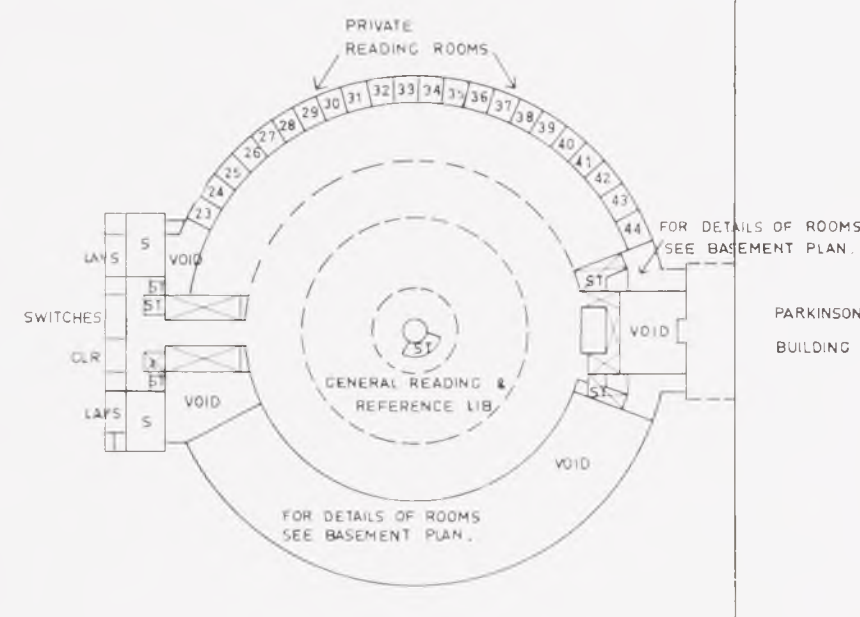
132c Ground Floor



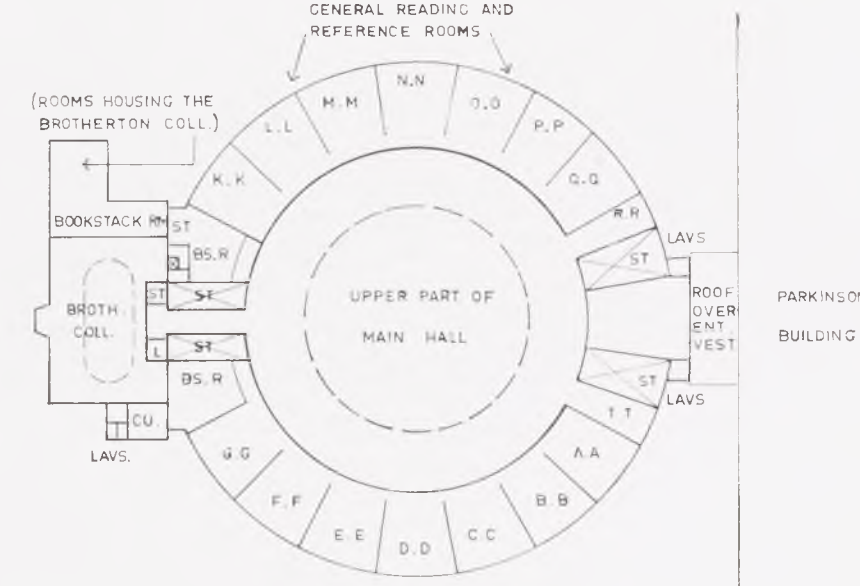
132e Gallery Floor



132b Mezzanine



132d First Floor



Basement Plan 132a

Room	Description	sq. ft.
1	Special Collection Room	700
2	Special Collection Room	560
3	Special Collection Room	280
4	Special Collection Room	280
5	Special Collection Room	560
6	Special Collection Room	560
7	Special Collection Room	560
8	Special Collection Room	560
	Strong Room	444
	Air Conditioning Plant	442
	Fan Chamber	300
	Air Conditioning Plant	442
	Old Machine Room	
23-44	(incl.) Private Study Rooms 56 sq. ft. each	1,232
	Lavatories	160
	Store	30
	Store	15
	Bookstack for Brotherton Collection	11,527
	Store	15
	Lavatories	160

Mezzanine Plan 132b

Room	Description	sq. ft.
1	Special Collection Room	700
2	Special Collection Room	560
3	Special Collection Room	280
4	Special Collection Room	280
5	Special Collection Room	560
6	Special Collection Room	560
7	Special Collection Room	560
8	Special Collection Room	560
	Strong Room	444
	Store	
	Staff	200
	Lavatories	150
	Cleaner	48
	Switches	84
	Lavatories	150
	Staff	200
	Stores	20
	Stores	30
23-44	(incl.) Private Reading Rooms 56 sq. ft. each	1,232
	Lavatories (Double height rooms already noted on Basement Plan)	160
	General Reading and Reference Library	11,527

Ground Floor Plan 132c

Room	Description	sq. ft.
A	General Reading Room	560
		(plus 140)
B	General Reading Room	560
C	General Reading Room	560
D	General Reading Room	560

E	General Reading Room	560
F	General Reading Room	560
G	General Reading Room	560
K	General Reading Room	560
L	General Reading Room	560
M	General Reading Room	560
N	General Reading Room	560
O	General Reading Room	560
P & Q	General Reading Room	1,260
	Store	210
	Staff	322
	Office	545
	Lavatories	96
	Librarians' Room	555
	Repairs and Cataloguing	1,155
	Store	30
	Store	210
	Unpacking Room	285
	Entrance Vestibule	
	Cleaner	30
	Entrance Hall	
	Lavatories	48
	Counter	
	Lavatories	48
	Cleaner	30
	General Reading and Reference Room	8,699

First Floor Plan 132d

Room	Description	sq. ft.
TT	General Reading and Reference Room	140
AA	General Reading and Reference Room	560
BB	General Reading and Reference Room	560
CC	General Reading and Reference Room	560
DD	General Reading and Reference Room	560
EE	General Reading and Reference Room	560
FF	General Reading and Reference Room	560
GG	General Reading and Reference Room	560
KK	General Reading and Reference Room	560
LL	General Reading and Reference Room	560
MM	General Reading and Reference Room	560
NN	General Reading and Reference Room	560
OO	General Reading and Reference Room	560
PP	General Reading and Reference Room	560
QQ	General Reading and Reference Room	560
RR	General Reading and Reference Room	140
	Bookstack	462
	Brotherton Curator	132
	Lavatories	72
	Gallery over Brotherton Collection	1,500
	Store	30
	Bookstack Room	750
	Store	36
	Bookstack	420
	Lavatories	30
	Roof over Entrance Vestibule	
	Lavatories	30
	Upper Part of Main Hall	

Gallery Floor Plan 132e

Gallery to Brotherton Collection	1,200
----------------------------------	-------



Yorkshire College Buildings

Basement Plan 134a

Description	sq. ft.
Solvent Store	85
Humidity Room (Research)	90
Constant Temperature Room (Research)	76
Mechanical Engineering Laboratory, Heat Engines Laboratory	2,200
Old Boiler House now Calorifier Room	
Cleaners and Polishers Stores	1,040
Administration Maintenance Electrician Workshop	720
Botany Research Laboratory	1,290
YEB Electricity Sub-Station	
University Switch Room	
Electrical Stores	370

Ground Floor Plan 134b

Description	sq. ft.
Store	312
Teaching Laboratory	356
Frame Spinning Room (Teaching Laboratory)	1,657
Research Room	314
Teaching Laboratory	594
Teaching Laboratory	618
Scouring Room (Teaching Laboratory)	538
Blending Room (Teaching Laboratory)	520
Teaching Laboratory	429
Staff	153
Research Laboratory	322
Woollen, Carding and Spinning Room (Teaching Laboratory)	2,342
Research Laboratory	256
Research Laboratory	272
Mechanics Shop	634
Textile Finishing Teaching Laboratory	2,527
Warping Room (Teaching Laboratory)	998
Store	426
Handloom Weaving Room (Teaching Laboratory)	2,878
Store	366
Power Loom Room (Teaching Laboratory)	3,080
Dry Finishing Room (Teaching Laboratory)	1,026
Teaching Laboratory	423
Wet Finishing Room (Teaching Laboratory)	1,065
Lavatories	160
Cleaners Room	69
Lavatories	150
Research Laboratory	338
Colour Chemistry, Pigments Laboratory (Teaching)	1,185
Textile Lecture Theatre	1,155
Colour Chemistry Lecture Theatre	780
Staff	247
Biomolecular Structure	528
Administration Furniture Store	754
Lavatory	110
Civil Engineering Drawing Office	2,228
Women Students Lavatory	575
Women Staff Lavatory	408
Research Laboratory	1,236
Washroom	201
Staff	94
Lavatories	115

Technicians Room	140
Dyehouse (Teaching Laboratory)	1,320
Staff Laboratory	243
Staff	208
Workshop	311
Teaching Laboratory	2,016
Store	77
Teaching Laboratory	1,050
Lavatory	66
Staff	242
Electrical and Mechanical Engineering Workshop	1,550
Humidity Room	112
Finishing Room (Teaching)	325
Lime Yard	391
Research Room	334
Lavatories	21
Lecture Theatre	342
Store	160
Drying Room	63
Machine Room (Teaching)	1,000
Machine Room (Teaching)	924
Technicians Office	228
Mechanical Engineering, Production Engineering Laboratory	600
Mechanical Engineering, Fluid Mechanics Laboratory	1,850
Mechanical Engineering, Fluid Mechanics Laboratory	2,140
Administrative Mechanical Maintenance Workshop	850
Mechanical Engineering, Theory of Machines Laboratory	440
Administrative Mechanical Maintenance Office	100
Administrative Porters	487
Civil Engineering Soil Mechanics	850
Workshop	266
Lavatories	209
Lavatories	50
Civil Engineering Concrete Laboratory	1,800
Civil Engineering Concrete Laboratory	529
Civil Engineering Research	280
Model Analysis	270
Civil Engineering Laboratory	830
Civil Engineering Laboratory	300
Tutor of Women Students	363
Tutor of Women Students	308
Administrative Warden of Men Students in Lodgings	250
Administrative Warden of Men Students in Lodgings	163
General Lecture Theatre	1,636
Botany Herbarium (Teaching Room)	780
Botany Biophysics Research	280
Botany Biophysics Research	200
Botany Biophysics Research	200
Botany Biophysics Research	280
Botany Biophysics Research	420
Botany Biophysics Research	790
Botany Biophysics Research	420

First and Upper Floors Plan 135a

Description	sq. ft.
Spinning Room (Teaching Laboratory)	3,558

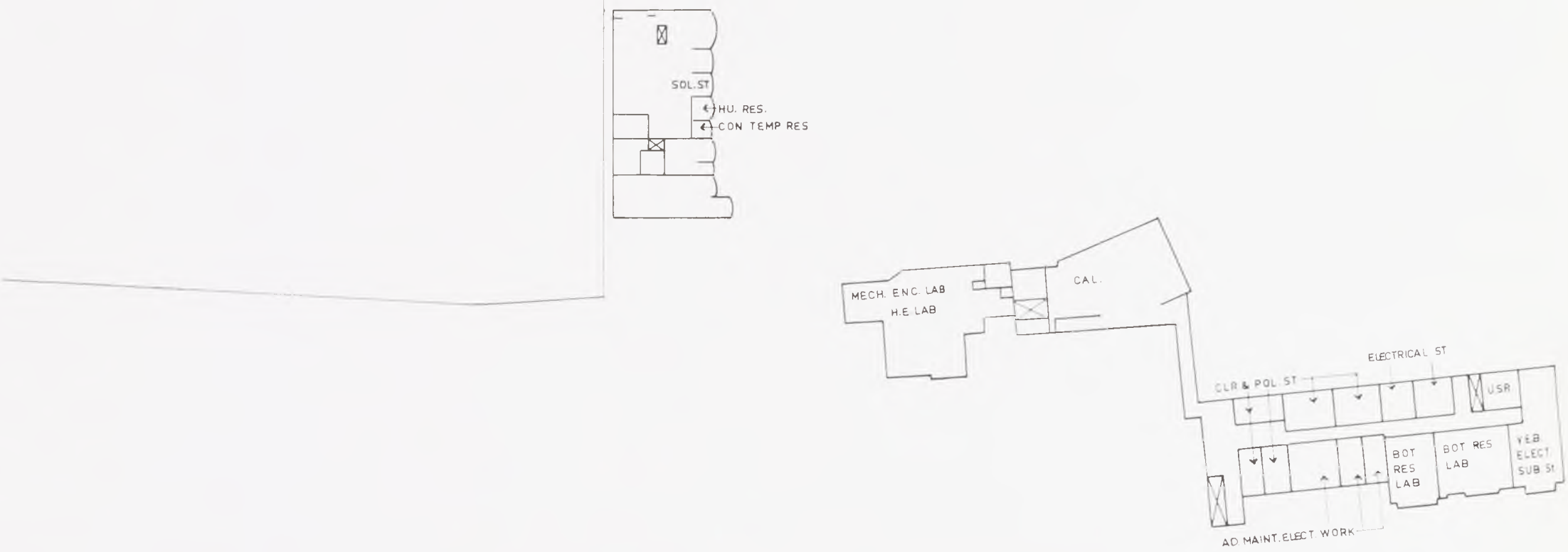
Continental Spinning Room (Teaching Laboratory)	2,252
Staff	168
Librarian	134
Library	439
Staff	258
Lecture Room	659
Museum	1,584
Research Laboratory	296
Research Laboratory	224
Staff Research Room	224
Research Room	108
Research Room	290
Research Room	654
Microbiology Research Laboratory	148
Museum	1,170
Lavatories	122
Administration	125
Staff	189
Research Laboratory	765
Dark Room	20
Textile Physics (Research Laboratory)	666
Colour Chemistry Library	622
Administration	50
Professor	228
Research Laboratory	527
Lavatory	76
Balance Room	147
Dyeing Laboratory (Teaching)	1,802
Store	175
Fadometer Room	44
4th Year Colour Chemistry Laboratory	1,380
Staff	243
Staff	208
Research Laboratory	550
Dark Room	110
Workshop	480
Research Room	417
Administration	270
Administration	168
Micro-wave and Electronics Teaching Laboratory	1,065
Administration	180
Lavatories	50
Professor	216
Staff Laboratory	74
Staff	168
Research Laboratory	737
Secretary	148
Professor	164
Balance Room	79
Teaching Laboratory	1,947
Mechanical Engineering, Staff and Research Laboratories	2,750
Great Hall	5,243
Administration	180
Engineering Lecture Theatre	1,014
Mechanical Engineering Staff	330
Mechanical Engineering Staff	310
Telephone Switchroom	405
Cleaner	72
Surveyor's Office	163
Surveyor's Office	422
Surveyor's Office	289
Surveyor's Office	224
Zoology Research and Staff	1,100
Zoology Research and Staff	950
Zoology Advanced Laboratory No. 1	1,800

Zoology Advanced Laboratory No. 2	1,620
Zoology Steward and Stores	280
Zoology Steward and Stores	215
Administration	105
Upper Part of General Lecture Theatre	1,636
Honours Laboratory (Teaching)	280
Stores	560
Advanced Laboratory No. 1	1,400
Staff	150
Advanced Laboratory No. 2	1,400

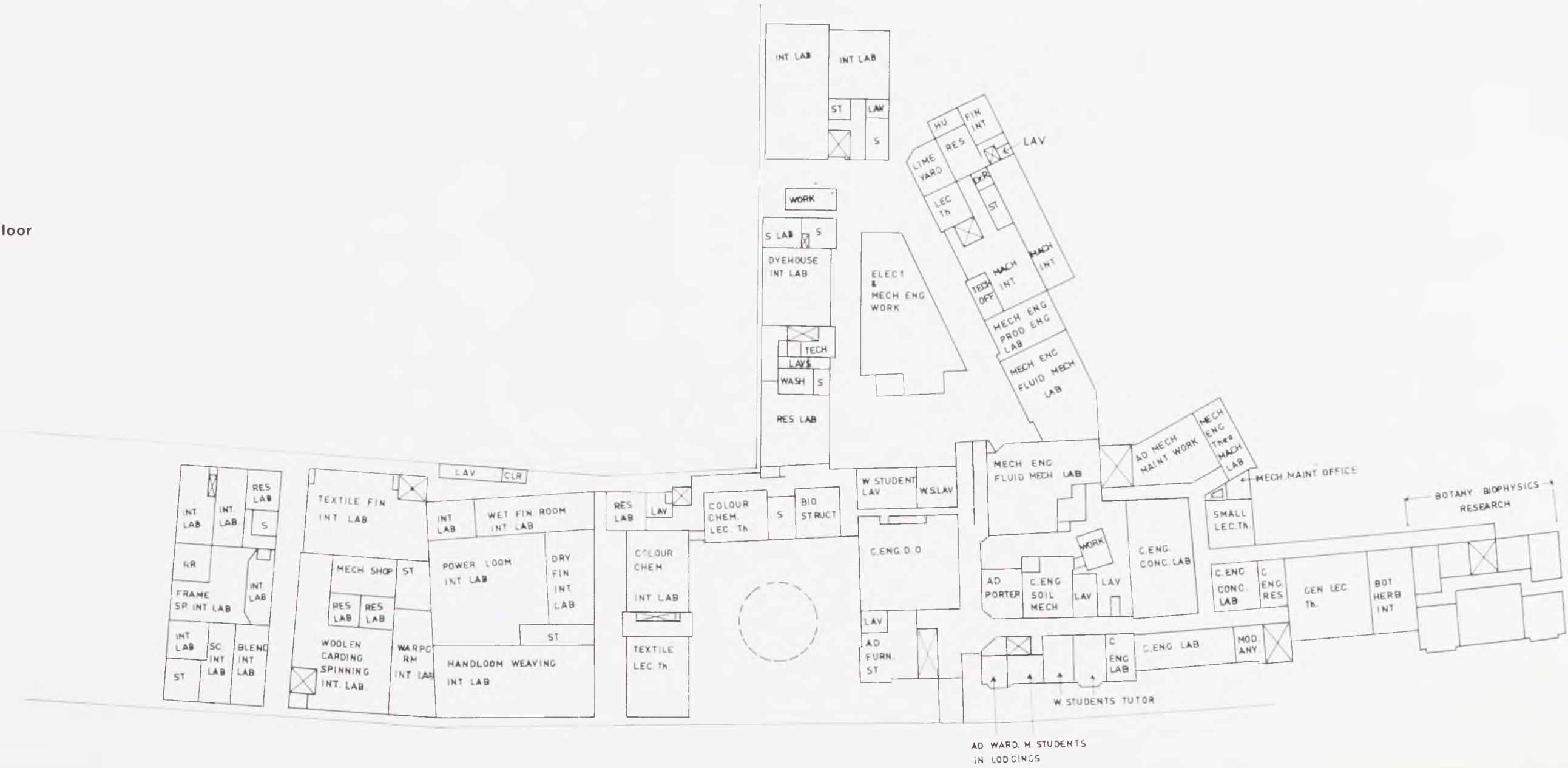
Second and Upper Floors Plan 135b

Description	sq. ft.
Store	200
Staff	176
Research Laboratory	1,400
Staff	164
Store	223
Staff	120
Staff	78
Staff	78
Teaching Laboratory	1,420
Store	120
Staff	216
Lecture Theatre	1,260
Technician's Common Room	112
Library	607
Electron Microscope Room (Research)	196
Store	160
Staff	180
Staff	117
Microscopy Bacteria Laboratory (Research)	351
Research Laboratory	693
Mechanical Engineering Drawing Office	1,550
Mechanical Engineering Drawing Office	1,400
Staff	100
Civil Engineering Drawing Office and Lecture Room	840
Zoology Museum	1,490
Staff	161
Staff	280
Research Laboratory	450
Store	80
Zoology Elementary Laboratory	1,671
Botany Elementary Laboratory No. 1	1,400
Botany Elementary Laboratory No. 2	1,400
Botany Staff	150
Staff	162
General Research Laboratory	880
Store	225
Dark Room	40
Research Room	324
Staff	214
Research Laboratory	116
Staff	192
Store	91
Lavatories	158
Staff	171
Staff	193
Staff	105
Dark Room	44

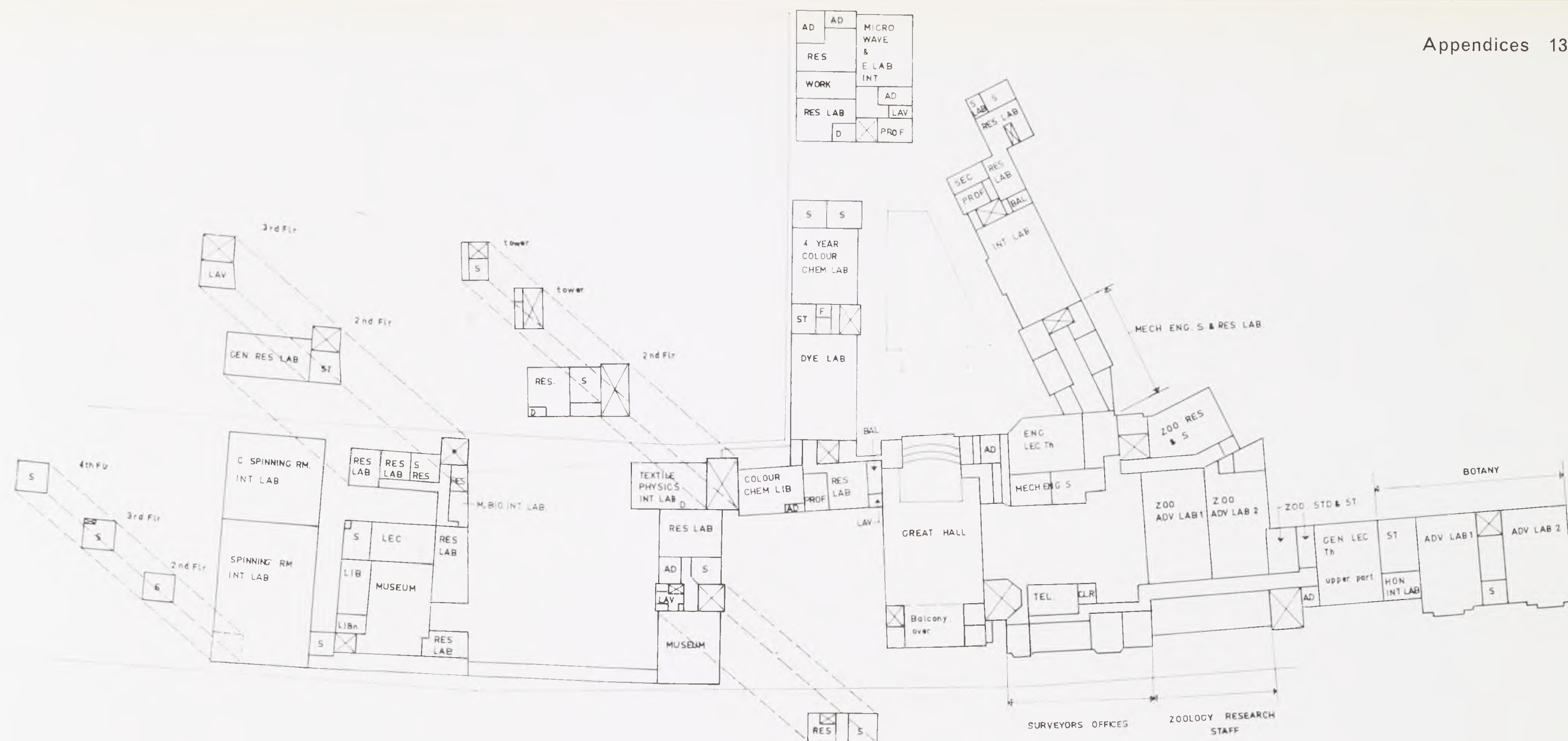
134a Basement



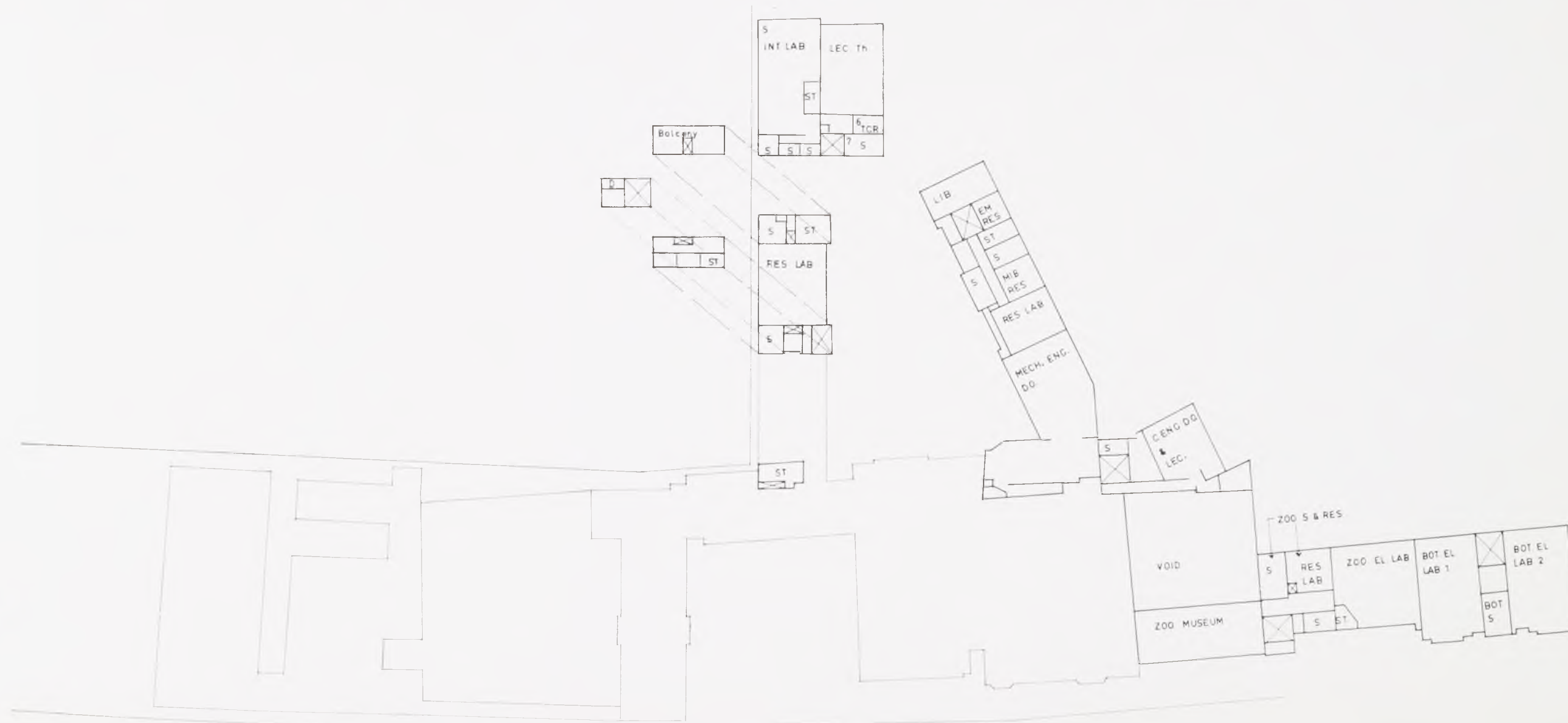
134b Ground Floor



135a First and Upper Floors



135b Second and Upper Floors



Arts Building

Basement Plan 137a

Room	Description	sq. ft.
	Ventilation Plant Room	2,088
6C	Store Room	45
6B	Locker Room	105
39	Workshop	224
39A	Fine Arts Store	221
6A	Locker Room	105
6	Dark Room	40
40	Female Lavatory	155
41	Male Lavatory	143
	Lecture Room	864
	Drama Store	550
	Class Room	625
	Pumps and Calorifiers	720
	Lockers	330
	Switch Room	660

Lower Ground Plan 137b

Room	Description	sq. ft.
122	Porters Room	67
120	Female Lavatory	274
123	Male Lavatory	307
	Control Room	63
	Drama Lecture Room	531
	Stage	480
	Dressing Room 1	231
	Dressing Room 2	210
112	Lecture Room	1,711
	Sub. Dean	208
	Secretary	176

Ground Floor Plan 137c

Room	Description	sq. ft.
113		40
217	Secretary	194
112	Lecture Theatre 321 Seats	2,889
232A	Spare	200
232	Spare	182
215	Store	194
233	Female Lavatory	155
234	Male Lavatory	143
	Seminar Room	294
	Lecture Room 2	187
	Secretary	187
	Professor's Room	187
	Seminar Room	187
	Sound Proof Listening	180
	Record Department	132
	PG Research	325
	Seminar Room 1	301
	Lecture Room 3	187
	Lecture Room 4	187

	Lecture Room 5	187
	Office Staff	187
	Seminar Room 2	238
	Seminar Room 3	187
	Library	391
		187
		187
		187
		187
		238
PO1	Interpreters Rooms	20
PO2	Interpreters Rooms	20
PO3	Projection Room	261
PO4	Interpreters Rooms	20
PO5	Interpreters Rooms	20

First Floor Plan 136a

Room	Description	sq. ft.
322	French Research Fellow	115
321	Modern Languages Library	2,214
324	General Study Room	352
339	Seminar Room 4	418
	Telephone	9
318	Store Room	28
319	Cases	56
323	Library Store	77
	Telephone	9
320	Librarian	115
317	French Study Room	352
340	Female Lavatory	155
341	Male Lavatory	143
	Professor	294
	Lecturers Room 1	187
	Lecturers Room 2	187
	Lecturers Room 3	187
	Lecturers Room 4	187
	Professor	312
	Secretary	187
	Staff Room	187
	Lecturers Room	187
	Lecturers Room	187
	Lecturers Room	209
	Lecturers Room 5	247
	Telephone Room	15
	Tea Room	28
	Lecturers Room 7	238
	Lecturers Room 6	187
	Native Assistants	187
	Native Assistants	187
	Seminar Room 3	187
	Post Graduate Research	187
	Seminar Room 2	187
	Seminar Room 1	392

Second Floor Plan 137d

Room	Description	sq. ft.
420	Cleaners Room	60
	Cupboard	16
	Telephone Booth	18
419	Coats Room	95

436	Classroom	407
437	Female Lavatory	178
438	Male Lavatory	156
418	Coats Room	95
419	Tea Room	63
	Telephone Booth	18
	Cupboard	12
	Head Department	301
	Lecturers Room 1	187
	Lecturers Room 2	187
	Lecturers Room 3	187
	Lecturers Room 4	187
	Head Department	312
	Secretary	187
	Lecturers Room 5	187
	Lecturers Room 6	187
	Lecturers Room 7	187
	Study Seminar Room	213
	Head of Department	236
	Store	17
	Tea Room	40
	Lecturers Room	245
	Lecturers Room	193
	Head of Department	193
	Lecturers Room	193
	Secretary	193
	Study Seminar Room	193
	Lecturers Room	193
	Head of Department	193
	Lecturers Room	245

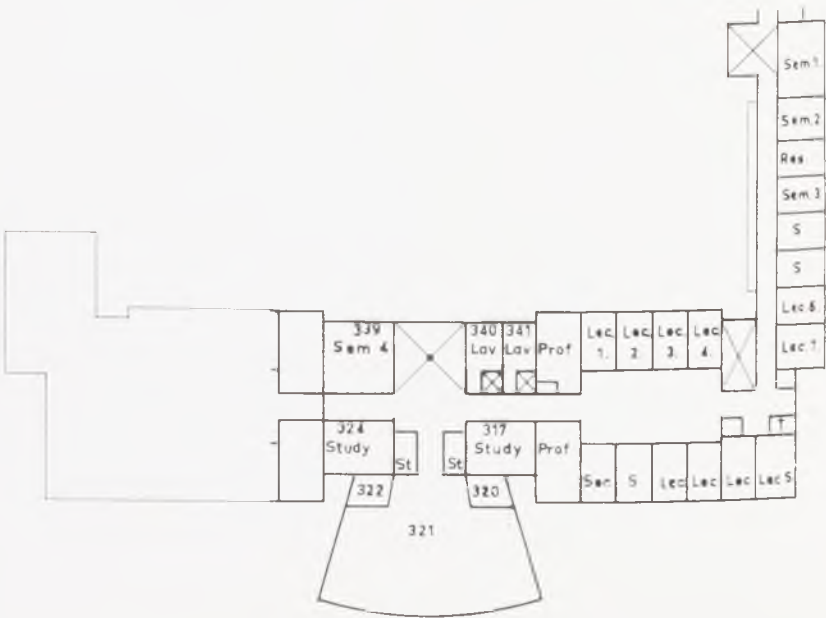
Third Floor Plan 137e

Room	Description	sq. ft.
516	Cleaner	60
	Cupboard	16
	Telephone Booth	18
	Coats Room	95
517		27
535		301
534	Seminar Room	174
536	Female Lavatory	159
537	Male Lavatory	159
515	Coats Room	95
	Telephone Booth	18
	Cupboard	12
514	Tea Room	63
	Professor's Room 1	301
	Lecturers Room 1	187
	Lecturers Room 2	187
	Lecturers Room 3	187
	Lecturers Room 4	187
	Professor's Room 2	312
	Lecturers Room	187
	Lecturers Room	187
	Lecturers Room	187
	Secretary	187
	Library	625
	Lecturers Room 5	265
	Lecturers Room 6	193
	Junior Staff 1	193
	Junior Staff 2	193
	Senior Members Staff	193
	Junior Staff 3	193
	Seminar Room	193
		197
		222

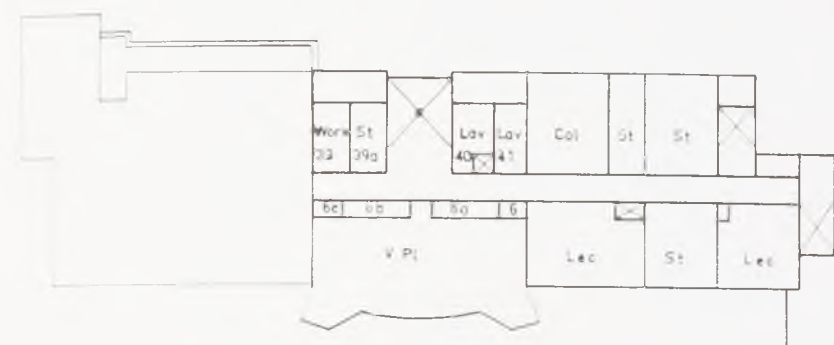
Fourth and Fifth Floor Plan 137f

Room	Description	sq. ft.
612	Seminar Room 8	308
	Telephone	24
	Telephone	24
612C	Store	48
612A	Studio	308
613	Female Lavatories	130
614	Male Lavatory	140
615	Lecture Room 3	156
616	Store Room	40
	Lecturers Room 2	187
	Lecturers Room 1	143
	Graphic Studio	374
	Head of Department	187
	Secretary	143
	Library	143
	Seminar Room	299
	Fifth Floor	
700A	Plant Room	154
700	Studio Room	1,000
701	Tank Room	330
702	Ventilation Plant	339
703	Lift Motor Room	390

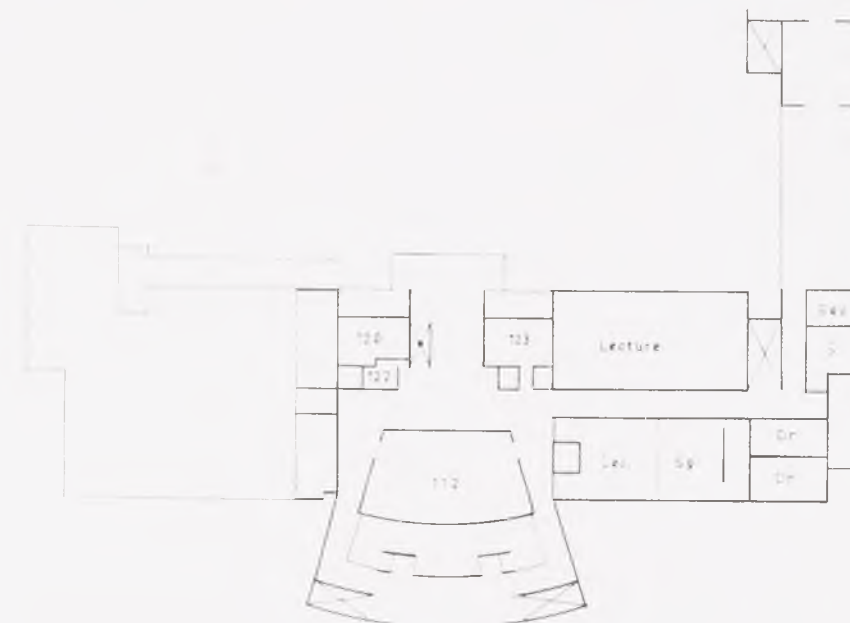
136a First Floor



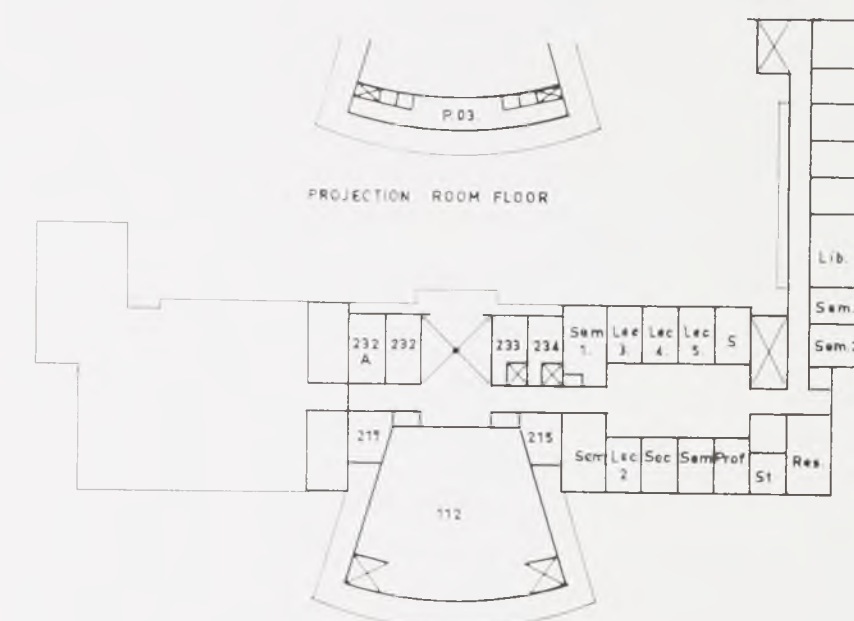
137a Basement



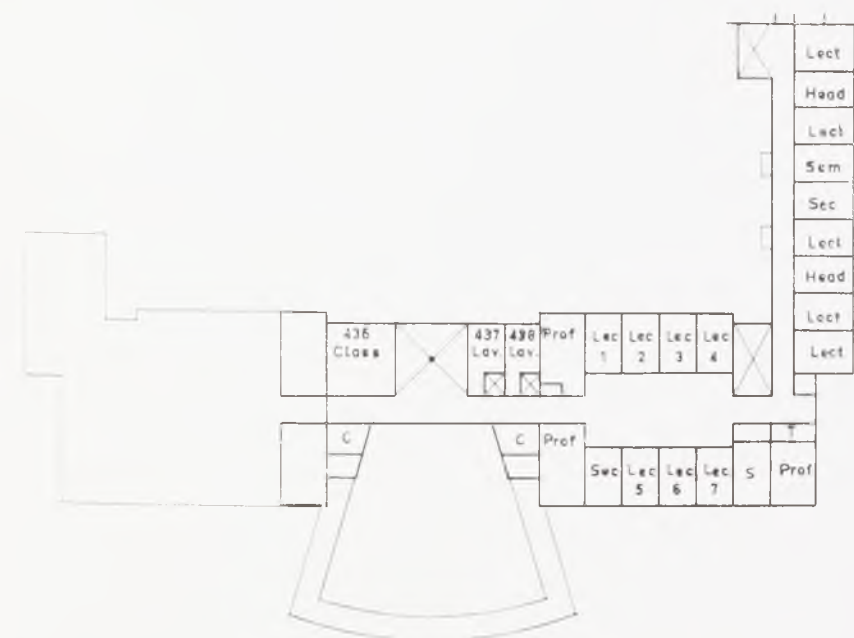
137b Lower Ground Floor



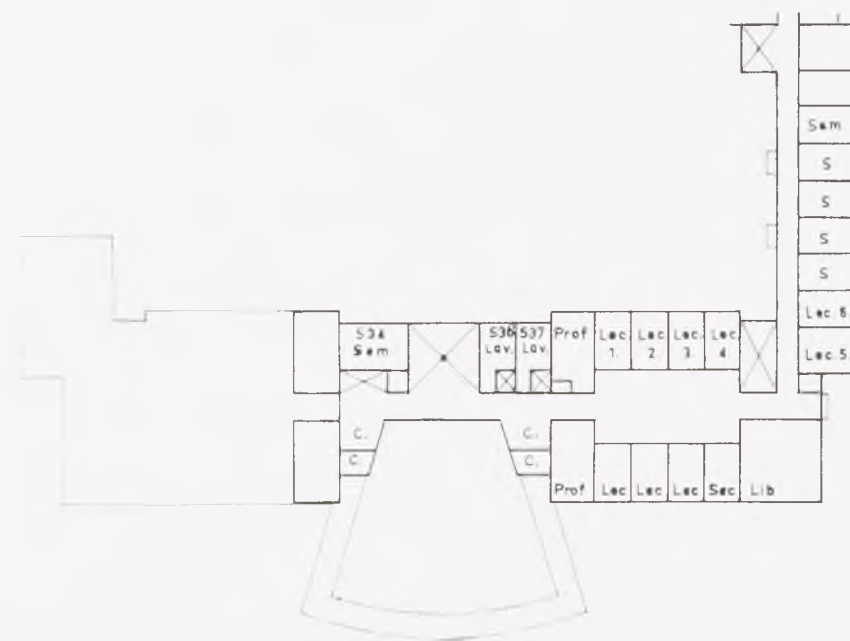
137c Ground Floor



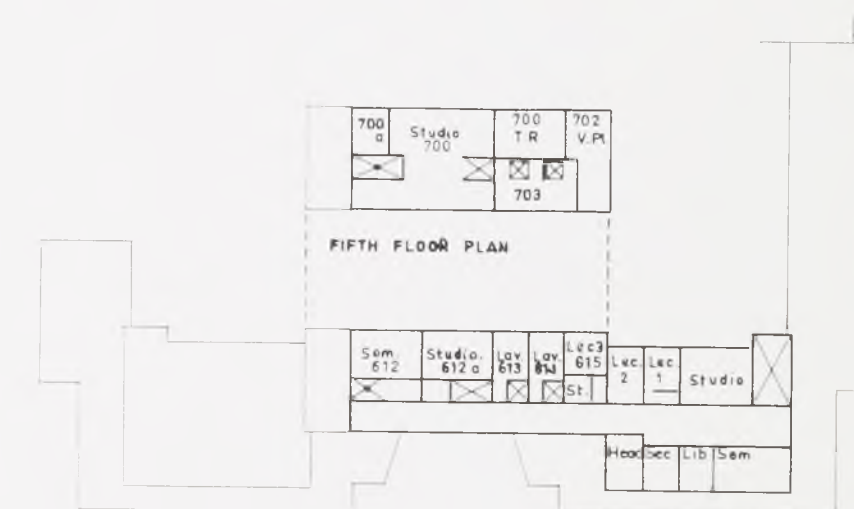
137d Second Floor



137e Third Floor



137f Fourth and Fifth Floors



Man-Made Fibres

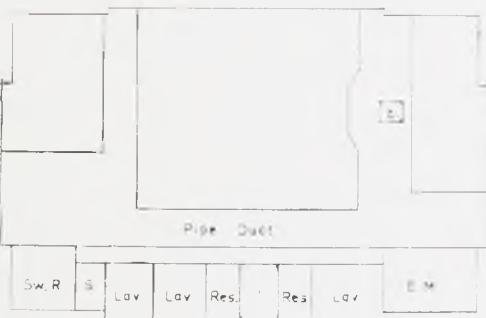
Basement Plan 138a

Room	Description	sq. ft.
Sw. R.	Switch Room 5	379
S.	Staff	137
Lav.	Staff W.C.	208
Lav.	Students W.C.	264
Res.	Research Room	153
Res.	Research Laboratory	160
Lav.	Lavatories	304
E. M.	Electron Microscope Room	580

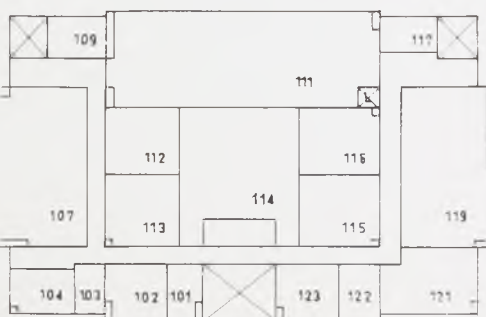
Ground Floor Plan 138b

Room	Description	sq. ft.
101	Admission	153
102	Research Laboratory	281
103	Workshop	146
104	Workshop	247
107	Dyeing and Finishing (Teaching)	1,273
109	Teaching Laboratory Colour Mixing	195
111	Dyeing and Finishing (Teaching)	2,238
112	Teaching Dark Room	418
113	Humidity Room (Research)	452
114	Air Conditioning Room	1,156
115	Humidity Room (Research)	452
116	Store	470
117	Teaching Laboratory	181
119	Dyeing and Finishing (Teaching)	1,257
121	Dyeing and Finishing	562
122	Store	141
123	Staff	298

138a Basement



138b Ground Floor



First Floor Plan 138c

Room	Description	sq. ft.
200	Staff	153
201	Staff	294
204	Weaving (Machine Room)	2,100
206	Cleaners	58
207	Research Laboratory	130
208	Yarn Manufacture (Machine Room)	2,190
209	Carding and Spinning (Machine Room)	2,742
210	Spinning Research	458
211	Machine Room	77
212	Staff	104
214	Knitting (Machine Room)	1,255
216	Yarn Store	533
217	Staff	284
218	Staff	147

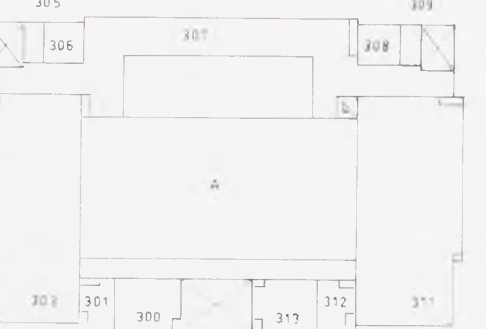
Second Floor Plan 138d

Room	Description	sq. ft.
300	Staff Research Room	291
301	Balance Room	129
303	Teaching Laboratory	2,093
305	Cleaners Room	56
306	Store	134
307	Gallery	
308	Stewards Room	134
309	Cleaners Room	56
311	Teaching Laboratory	2,093
312	Balance Room	129
313	Staff Research Room	291

138c First Floor



138d Second Floor



Third Floor Plan 138e

Room	Description	sq. ft.
400	Research Laboratory	464
401	Staff Research	282
402	Research Laboratory	190
404	Lecture Theatre	1,552
407	Lavatories	100
408	Store	162
411	Staff	158
412	Lavatories	160
415	Lecture Theatre	980
416	Research Laboratory	180
418	Research Laboratory	570
419	Research Laboratory	464
Stu.	Design Studio (Teaching)	1,568

Fourth Floor Plan 138f

Room	Description	sq. ft.
Res.	Research Room	84
500	Store	201
L. R.	Lift Machinery Room	
505	Store	
Res.	Research Room	72
Res.	Research Room	72
T. R.	Tank Room	

138e Third Floor



138f Fourth Floor



Agriculture Building

Basement Plan 139a

Room	Description	sq. ft.
1	Lavatories	304
2	Dark Room	170
3	Laboratory	160
4	Office	240
5	Store	205
6	Store	20
7	Laboratory	294
8	Workshop	273
9	Store	210
10	Laboratory	247
11	Staff	247
12	Office	260
13	Cloaks	399
14	Research Laboratory	379
15	Preparation Laboratory	574
Int. Lab.	Laboratory	350
16	Laboratory	823
17-18	Offices	360
	(plus 260)	
St.	Store	49
M.Pl.	Mechanical Plant	104

Ground Floor and Mezzanine Plan 139b

Room	Description	sq. ft.
21	Lavatory	180
22	Lecture Room	70
23	Library	1,390
24	Lecture Room	700
25	Office	320
26	Office	280
27	Office	260
28	Office	260
29	Lecture Room	1,250
30	Office	260
31	Office	260
32	Office	280

First Floor and Mezzanine Plan 139c

Room	Description	sq. ft.
Lav.	Lavatory	294
34	Lecture Room	560
35	Office	260
36	Laboratory	1,330
37	Museum	120
38	Research Laboratory	280
39	Office	270
40	Laboratory	620
41	Advance Laboratory	280
42	Preparation Room	240
43	Preparation Room	200
Int. Lab.	Laboratory	440

44	Research Laboratory	329
45	Private Rooms	210
46	Private Rooms	300
47	Research Laboratory	400
48	Office	280

Second Floor Plan 139d

Room	Description	sq. ft.
49	Lecture Room	560
50	Balance Room	240
51	Laboratory	1,430
52	Stores	400
53	Stores	140
54	Office	280
55	Office	320
56	Office	170
57	Laboratory	260
58	Laboratory	240
59	Laboratory	140
60	Research Laboratory	616
61	Research Laboratory	620
62	Laboratory	400
63	Laboratory	400

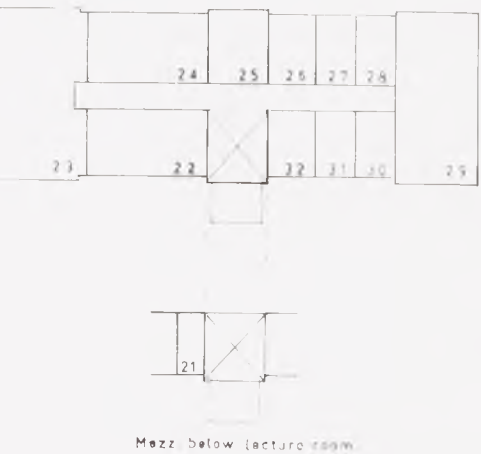
Roof Plan 139e

Room	Description	sq. ft.
Gh.	Greenhouse	300
Gh.	Greenhouse	140

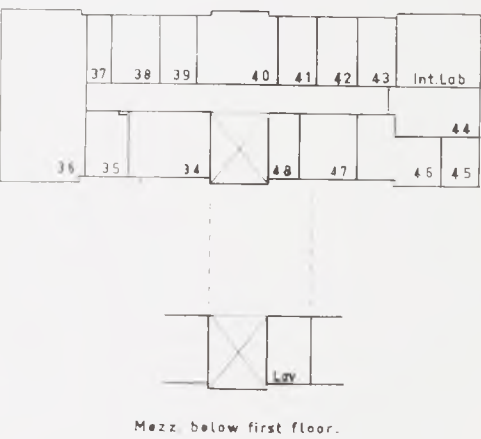
139a Basement



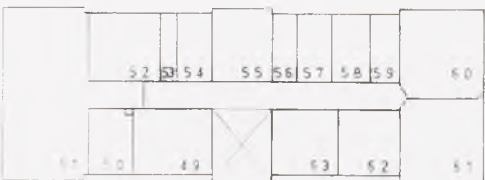
139b Ground Floor and Mezzanine



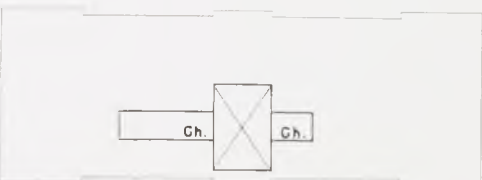
139c First Floor and Mezzanine



139d Second Floor



139e Roof



University House and Students Union

Lower Ground Floor Plan 140a

Room	Description	sq. ft.
2	Dry Store	500
4	Men	172
7	Women	181
10	China and Linen	519
	Cooks	33
13	Store	85
15	Store	51
16	Motor	112
17	Cloaks	302
27	Cloaks	192
	Cloaks	203
28	Service	115
26	Female Students Toilet	243
	Lobby	72
32	Powder Room	358
38	Male Staff Toilets	264
39	Store	164
42A	Lockers	456
3	Store	37
40	Store	37
45	Cloaks (Men)	1474
63	Bar	1916
64	Beer Cellar	425
65	Servery	153
68	Coffee Lounge	4850
73	Servery	205
59	Manageress	60
77A	Motor	
77	Store	
78	Store	287
81	Wash-up	378
82	Soup Kitchen	1086
83A	Salad Preparation	838
84	Cloaks	1192
85	Store	330
88	Kitchen	350
91	Calorifier	582
94	Lift Motor	90
92	Switches	433
89	Stores	262
86	Wine Store	255
		170
B	Books	283
R.M.	Recreation (Men)	320
C.M.	Cloaks (Men)	1358
Lav.	Lavatories	420
M.	Meters	
St.	Store	105
R.R.	Rest Room	143
D.	Dark Room	112
C.W.	Cloaks (Women)	1420
F.	Fuel	249
H.	Heating	409
Pu.	Pump	119
	'Gryphon' Room	153
R.W.	Recreation (Women)	304
St.	Store	48
C.R.W.	Common Room (Women)	1395
S.R.	Social Room	2294
C.R.M.	Common Room (Men)	1350
A.	Area	
	Total Circulation	7974

Mezzanine Plan 140b
Students Union

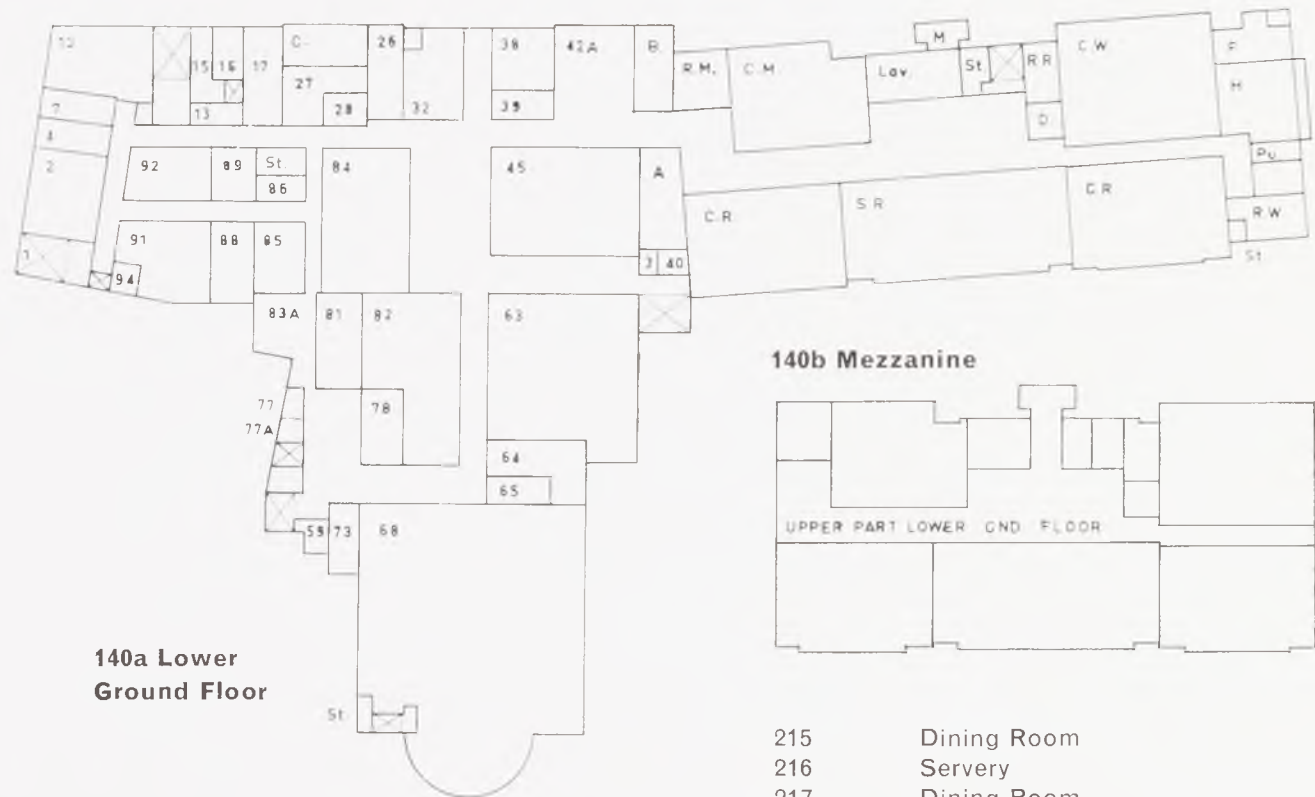
Room	Description	sq. ft.
Dr.	Dressing Room	176
St.	Store Room	493
St.	Store Room	229
Dr.	Dressing Room	176
	Circulation Area	180

Ground Floor Plan 141a

Room	Description	sq. ft.
106	Office	81
St.	Store	73
107	Store	306
108	Larder	166
109	Office	311
111	Manager	162
115	Hall	181
117	Preparation	620
118	Pantry	216
119	Servery	320
122	Dining Room	1519
123	Hall	961
Lg.	Lounge	2738
Off. 1	Office	498
Off. 2	Office	266
Off. 3	Office	117
Th.	Theatre	3870
Dr.	Dressing Room	170
Sg.	Stage	884
Dr.	Dressing Rooms	170
T	Tea Room	1152
K	Kitchen	422
St.	Store	80
D.R.	Dining Room	4638
130	Dining Room	7755
132	Servery	270
137-138	Wash up	2000
	Servery	276
140	Kitchen	2325
141	Veg. Prep. Room	420
	Chefs Office	84
	Cold Milk Store	84
ST.	Cold Meat Store	112
2	Cold Fish Store	84
149	Veg. Store	156
144	Hardware	72
143	Meat and Fish Prep.	450
	Store	96

Mezzanine Plan 141b

Room	Description	sq. ft.
152	Womens Lavatories	321
159	Dining Room	1050
Upper 115	Upper Hall	
164	Music	312



Upper 117	Upper Pastry	
Upper 122	Upper Dining Room	
Upper 123	Upper Hall	
Bil.	Billiards	1305
Ch.	Chess or Cards	264
Com.	Committee	100
Com.	Committee	100
Com.	Committee	100
Com.	Committee	130
Bal.	Balcony	989
Upper Th.	Upper Theatre	
Com.	Committee	437
Com.	Committee	460
St.	Staff and O.S.A.	483
Lib.	Library	1305
	Platforms (Stage)	267
	Platforms (Stage)	267

First Floor Plan 141c

Room	Description	sq. ft.
176	Lavatory and Cloaks	328
178	Rest Room, Dining Room	321
180	Cards	168
181	Billiards	567
	Store	30
185	Dining Room	348
	Store	77
190	Servery	708
192		
195	Dining Room	2172
199	Lounge	1590
206	Manageress	203
207	Secretary	203
208	Lounge	678
209	Reading Room	795
210	Servery	286
211	Senior Common Room	1662
	Coffee Lounge	

140b Mezzanine



215	Dining Room	236
216	Servery	288
217	Dining Room	258
218	Library	816
220	Male Cloaks	472
221	Male Lavatory	143
229	Female Cloaks	389
228	Female Lavatory	103
230	Table Tennis	389

Second Floor Plan 141d

Room	Description	sq. ft.
238	Bath	84
237	Kitchen	109
236	Bedroom	94
	Toilet	20
239	Kitchen	94
241	Bathroom	58
242	Sitting Room	288
243	Bedroom	232
St.	Store	192
St.	Store	227
	Bathroom and W.C.	74
252	Kitchen	145
253	Dining Room	132
254	Bedroom	280
255	Living Room	276
256	Bedroom	125
257	Bedroom	131
	General Store Motor Room	48
	Lift	84

Roof Plan 141e

Room	Description	sq. ft.
V.Pl.	Ventilating Plant	553
L.	Lift	33



Acknowledgements

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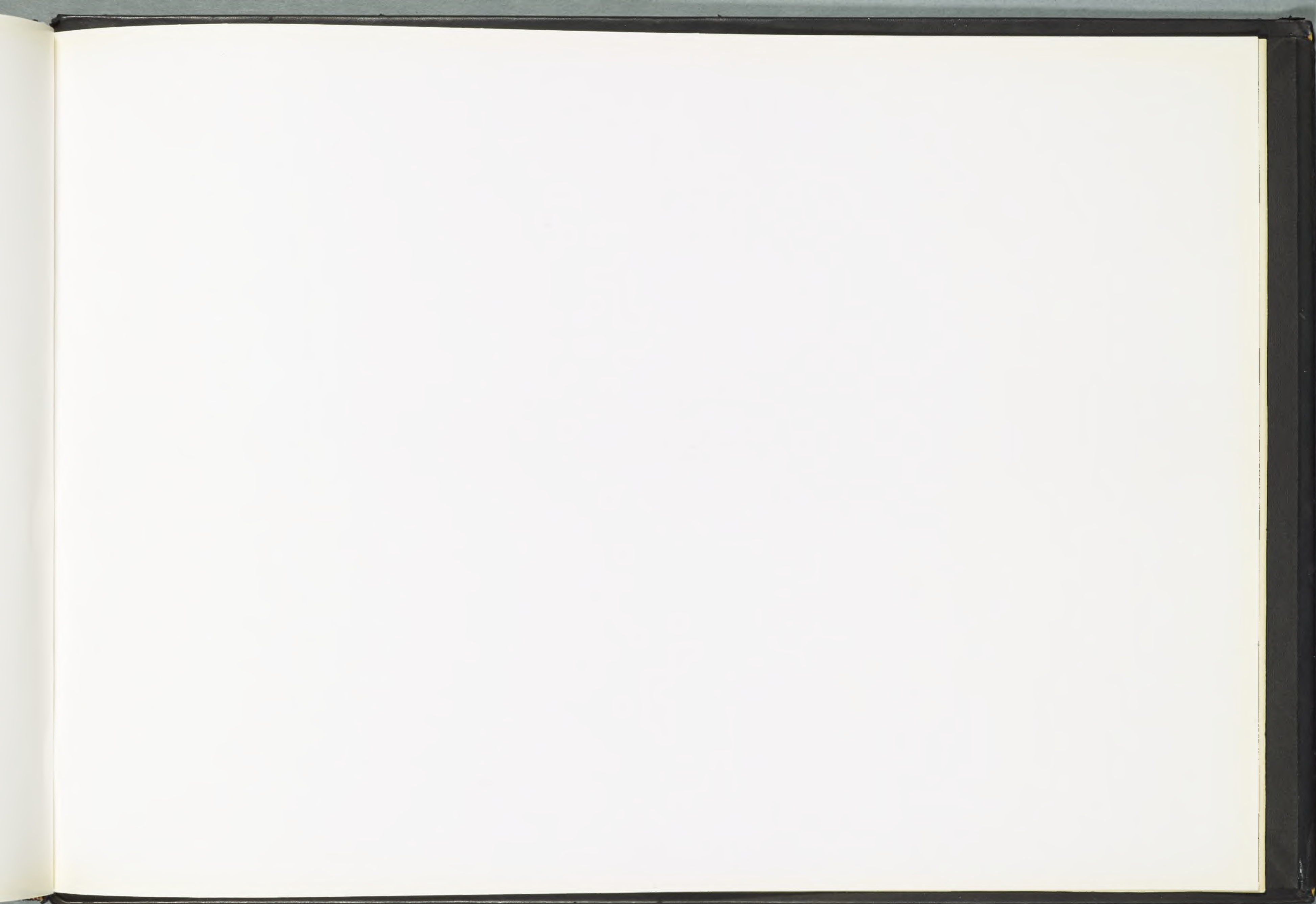
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